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The TELEPHONE REVIEW

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THE TELEPHONE REVIEW

JAN. 1916
VOL. 7
NO. 1

TALK AHEAD OF THE CROWD

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Season's Greetings

Every year there comes to us that season of good cheer when, whatever our daily routines might be, we feel like giving expression to the strong bonds of friendship that hold us as one big happy family. That season, the holiday season, when with the Christmas spirit abroad in the land we shout our greetings from one to the other as we pass, is with us, and so the Officers and Directors extend to every employe best wishes for a Merry Christmas and a Happy and Prosperous New Year.

E. H. Herbst

Vice President.

1915.

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The Telephone Review

New York January 1915

VOLUME 7 NUMBER 1

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

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VOL. VII. JANUARY, 1916 No. 1

At the New Year

WE have reached the first of a new year. This is a time when many people make new resolutions and start a diary. Both the resolutions and the diary are often neglected after a short while, and we go on pretty much as before, but not just the same. Every fresh start helps just so much to keep us from slipping back just that much farther, even if it is not persevered in throughout the year.

The Importance of Little Things

NO better illustrations of the importance of seemingly little things could be given than are found in the article on tying and splicing of copper wire by Mr. W. H. Collins, of the Plant Engineering Department, Central Division, which we print in this issue.

In speaking of tying and splicing as little things we must not be misunderstood as implying that they are unimportant, for, as Mr. Collins emphasizes, maintenance cost and continuity of service largely depend upon them, and they are, therefore, of the utmost importance. They are the little things, however, in the sense that each splice, or tie, is a small and simple piece of work.

If one single piece of wire could be used between toll or long distance points, and splicing eliminated, the importance of tying would still remain, but, as over long stretches there are both a great many splices and a great many ties, the necessity for each one's being made properly becomes increasingly important.

In principle, this is no different from the seemingly trivial things all of us have to do in the course of a day's work. There is a very close analogy between splicing and tying telephone wires and splicing and tying the other jobs we do so that operating costs will be reduced and efficient service obtained. One letter not filed properly may cause hours of search to locate it; one interview in which a subscriber is not made a friend of the Company may lose us his good will; one telephone conversation in a voice without the smile may interfere with the continuity of good service —if not in transmission, at least in promoting the interests of the Company; and so on throughout every department and every piece of work.

There is another thing we should like to say about Mr. Collins's article, and that is, it is the result of an intensive study of his own work, from which he must have gained greater knowledge for himself as well as material for his valuable and interesting contribution to our magazine. How many of us know enough about our jobs to write an article which would be so helpful to others?

Just Dogs

TWO dogs come to our house every day to visit our Irish terrier. He has been trained to stay around the lot, and so when they want his society they have to make the call. One of them is a splendid specimen of English bullship, who lords it over the other two, as if by right, and never hesitates to appropriate a bone not intended for him. His right is never disputed, because it is backed up by might. The other dog is a cunning little puppy of uncertain pedigree, whose chief object seems to be to amuse his companions and find the bones which they take from him. When our family have watched this as long as they can, they sometimes call in the little fellow to give him something special. On such occasions the bulldog slinks off, as if conscious of having forfeited his share of the feast, while the little fellow comes up with beaming eyes and a dog-smile on his face that win for him the nicest tidbits.

Now, here's the point of this story: Good manners make more friends and gain better consideration from people we call the public than probably anything else in the world. This little dog has given us a first-class lesson in how to be happy and to make others happy.

1876-1915

AT the Centennial in Philadelphia in 1876 was a child four years of age, whose young imagination was fired by the speaking telephone which was first exhibited there. This boy has grown to manhood and yet the scene at the Exposition "is," he writes us, "among my few vivid memories."

The development of the telephone since that day has doubtless kept alive those early recollections, and now as a climax comes the Transcontinental and the Wireless to inspire his genius to poetic effort.

The boy is now Mr. Edward Porter, of Philadelphia, who sends us the following, which he calls a contribution to the "conscience fund":

Hello, Bell!

By Edward Porter

1876—At the Centennial

HELLO, Bell! What ever has possess'd you?
They tell me you're chief fakir o' the show!
Say, you can fool th' greenhorns from th' country,
But not th' folks that's city-bred—we *know!*

You're talkin' round th' grounds an' back t' Watson?
You'll land in jail or madhouse—just you wait!
Why, next you'll claim to chat wi' old Saint Peter,
Right at th' entrance o' th' Golden Gate!

1915—At the Panama-Pacific Exposition

HELLO, Bell! You've my name, an' you forget me?
Well, I don't blame you—I was mighty rough;
I us'd hard words, an' swore you'd get in trouble!
Lots did? Forgive 'em all? Ha, that's th' stuff!

My conscience bade me make this call cross-country!
You bet it's worth it! Hold th' wire! Wait!
I'm not Saint Peter—recollect my folly?—
But here you're speakin' to th' *Golden Gate!*

(RECAP)

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Both Sides of a Question

WHENEVER there is a particularly difficult piece of work put through with flying colors, the story of it belongs no longer to the office that did it, but to every employee of the Company. Because it is only by keeping alive to the well-rounded work of the Company as a whole that we can really see our own work as it is. Truth is not isolated facts, but facts seen in *relation*. Just so our jobs are not separate wholes, which alone concern us. They must be seen in relation to the big complicated organism—the entire work of the Company, of which each job is an integral part—before they can be seen truly.

That is why there is THE TELEPHONE REVIEW. Through the magazine we can see the work as it is being done, from many sides, and so keep our own work related to the whole. On the other hand, if we only *read* THE TELEPHONE REVIEW and never, through it, tell other employees of the Company about our work, we fail to keep our jobs in their right relation, as completely as if we ignored every other function of the organism but our own. For the relation of our work to the whole is a positive one, acting upon other sides of the organization, just as truly as it is receptive, to be acted upon and enriched by appreciation of other phases of the greater work.

Ahead of the Crowd

IN seeking for appropriate and artistic cover designs for our magazine each month we are confronted with a difficulty which magazines in general do not have to face, and that is, that the subjects must all be of one kind—illustrations of the telephone. In common with all other magazines who use artistic covers, we must also strive to get as good art work as possible, whether in drawings or photographs, and to have the pictures timely; but these difficulties are not so great as the difficulty of getting the kind of telephone pictures we want. THE TELEPHONE REVIEW being for employees, and not an advertising medium, pictorial advertisements on our front cover would not be appropriate. This still further limits our range of choice. Most of the suggestions submitted to us, however, are of this character.

A combination of subject and treatment which will present to the employees the charm and beauty of the business in which we are all engaged, reveal the hidden meaning of our efforts in their relation to the great Bell ideal of "universal service"—this it is not easy to obtain with uniform regularity, month after month. Sometimes it seems as if this must be a new phase of art, to depict to the workers what it is they are doing in its broad significance, instead of merely representing uses of the telephone.

THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION

A GREAT opportunity taken up in a great way and carried out with great credit and success.

It has given to the world a wonderful example of accomplishment by personal effort working through organization.

It has created new ideals of beauty in architecture, horticulture, the use of color and illumination.

It has celebrated the completion of new methods of intercommunication and of transportation.

It has witnessed the beginning of personal, voice-to-voice, transcontinental intercommunication both by wireless and by wire.

All of these things have combined to make the Pacific Slope one of the integral parts of this great nation, "which makes perfect the whole and causes the bigness thereof."

—Message from Mr. Vail on the closing day of the Panama-Pacific Exposition, December 4, 1915.

With a view to seeing what some fresh minds could produce, two prizes of $100 each were offered to the students of the New York School of Fine and Applied Art for the best cover designs for our magazine for New Year's and Easter, 1916. Some forty-odd students entered designs in the contest and the decision was made by the judges on December 1.

The judges were two well-known artists, Mr. Howard Giles and Mr. Edward Penfield, of New York, and Mr. R. S. Scarburgh, who represented the New York Telephone Company. These gentlemen were very much impressed with the quality of work shown in all the designs, which testify to the high standard of artistic effort that is being promoted in the school. The decisions were based first upon availability, and second, upon artistic quality. The first prize for New Year's was awarded to Mr. E. Everett Henry; the first prize for Easter, to Miss Myrtle Coons. Numerous other designs received favorable mention, particularly one by Miss Marion Wildman.

Mr. Henry's design appears on our front cover this month, and that by Miss Coons will appear on our April issue.

In acknowledging receipt of the prizes sent to her for delivery Miss Susan F. Bissell, executive secretary of the School of Fine and Applied Art, wrote us:

"I have, personally, deeply appreciated the spirit you have shown toward the school, and we are all most grateful for your delightful coöperation."

All the pictures, we understand, are to be placed upon exhibition in a Fifth Avenue art gallery, so that the public may see them.

The notable improvement in the quality of art work used for advertising purposes today over that of a decade ago seems to justify the hope that artists will see a new field open in the kind of cover designs we are seeking, and that some of them will get "ahead of the crowd."

Saved by Telephone

THE telephone saved 160 persons at Chodikee Lake, N. Y., December 27, from a fate even worse than losing their personal belongings in a fire and having to spend the night in a church sleeping in the pews and on the floor. A hotel and school building were destroyed, with a loss estimated at $150,000. Before the telephone connections were broken, a call for help was sent to Highland, seven miles distant across the mountains. Sleighs started immediately, and about 100 guests of the hotel and 60 students of the school were found shivering, knee-deep, in the snow, clad in scant attire. By midnight the sufferers were brought to the Methodist church at Highland. No one was injured, and although many suffered from exposure, the lives of all were probably saved when the telephone call was made.

Central Always There

"WHEN leaving the central office last evening," writes Miss M. E. Denney, chief operator at Branch Brook, "Miss J. Dunleary, senior operator at Branch Brook, saw two boys, of six and eight years respectively, outside the building. The older one was peering at the windows and remarking, 'See that building? That's where Central lives.'

"The Younger One: 'Yeh? How d' you know?'

"The Older One: 'Some kid told me she's always there; no matter when you call up, she never goes out of there.'

"The conversation ceased at this point when Miss Dunleary passed along, and she received a look of wonderment as though the boys were thinking what would happen when she was away—would they be able to get an answer if they called up after she had gone out?"

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King Winter On a Rampage

THE storm of December 13, 1915, was remarkable in that the damage which it caused to the telephone plant in some sections was greater than even the blizzards of March, 1914, or March, 1888. Westchester County suffered the most. Service was interrupted on all long distance lines, all open wire local trunk circuits, and about 12,000 stations. This storm also seriously damaged the plant in the New Jersey Division, causing total interruption on four long distance lines, and scattering trouble on two long distance lines. Service was interrupted on 360 open wire local trunk circuits and 7,400 stations.

The heavy snowfall and drifts made the work of repairs slow and tedious. Of course, slow in telephone parlance means a matter of hours and sometimes as much as a day!

Long Island escaped. The lower section of the Hudson Division was badly affected. The Central Division had its visitation a few days later when on Friday, December 17, a sudden and fierce tailer of the big storm, or maybe a little one of its own, wrought havoc over a portion of that territory. No reports have been received of any serious damage in the Western Division at this time.

The Plant and Traffic Departments behaved as they always do, which goes without saying. Impelled as if by one idea, both the women and the men hustled out to meet the needs of the public. We all know that in pleasant weather everybody telephones because it is so easy, and in bad weather they telephone more, because it is the only way to get over the ground! That's where the Traffic and Plant forces come in, to make it possible for the public to do this.

The following brief accounts of the damage in Westchester County and of how the trouble was handled in New Jersey, together with the accompanying illustrations, are typical of two aspects of the storm as it affected the Company.

The loss involved runs into hundreds of thousands of dollars. One phase of the preparedness of this Company is that the funds were available without an instant's delay or any red tape.

Some of the Effects of the Storm in Westchester

By G. G. Nason, Plant Dept., M.-B.

THIS season Old King Storm started in early on his yearly desire to annihilate the overhead wire systems, particularly throughout Westchester County. For the sake of those concerned in the upkeep of the overhead plant of the telephone, telegraph, electric light, and trolley companies, it is to be hoped that the Old King literally blew himself out on the night of December 13, and won't be able to "come back" this season.

Boston Midland Line, Bronx River Road, South of Mt. Vernon

Along Carpenter avenue, just south of Woodlawn Station in the Bronx, nine poles of the New York-Bedford line, carrying fifty wires, went down, falling across the street and through an electric light line.

In Yonkers, the Boston Main line suffered a severe break. Poles averaging sixty-five feet in height and carrying over ninety wires broke off about twenty-five feet above the ground, the upper portion of the poles falling across the road and hanging in the trees. The accompanying pictures give an idea of the tasks the men had in hand to clear away the wreck. Service was restored on some of the circuits by cutting the wires into an existing underground terminal a short distance north of the break, and using local No. 19 gauge cable to the Yonkers central office, there connecting with the toll cable to New York. Smaller breaks in the line north of Yonkers were cleared temporarily by means of emergency cable or twisted pair.

The Boston Central line, carrying sixty wires, went down for about eight poles on Central avenue south of Tuckahoe. On the opposite side of the road the main line of the Postal Telegraph Cable Company carrying about fifty wires, also went down.

Two severe breaks occurred on the Boston Midland line; one break included seventeen poles along the Bronx River road, Mt. Vernon, where the falling poles and wires carried away the overhead trolley structure; the other break occurred where the line crossed over the N. Y. C. R. R. at North White Plains. At this point the poles were from seventy-five to eighty feet in height, and carried sixty wires.

Probably one of the most expensive breaks to repair occurred on the White Plains-Tarrytown line along the Tarrytown road opposite the Westchester County fair grounds, the first two poles being underground terminal poles, one connecting with forty toll wires and a seventy-five-pair aerial subscriber cable, and the other with a 250-pair No. 16–19 gauge aerial cable, used for local toll service and feeding the theoretical central office district known as Elmsford. In falling, one of the cables crossed with the trolley line and put both underground terminals out of service.

For the number of poles involved the White Plains-Portchester line suffered more than any one other line. Out of 200 poles over fifty went down. For a portion of the way the line was paralleled by the main line of the Postal Telegraph Company, mostly sixty-foot cedar poles carrying fifty wires and these

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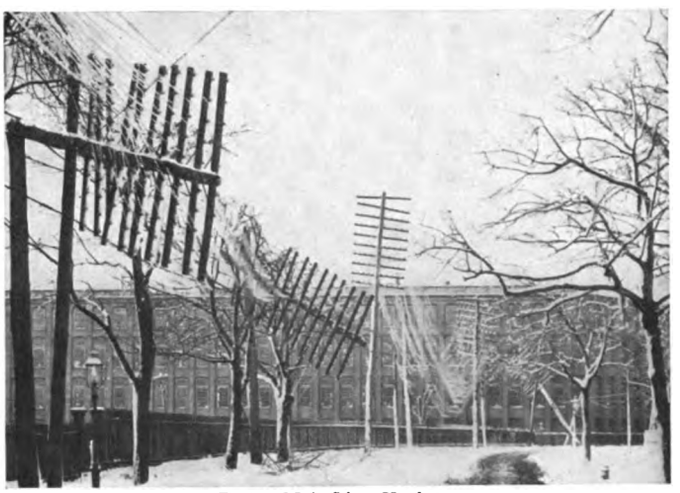
Boston Central Line, Central Avenue, South of Tuckahoe

also went down for a considerable portion of the way.

While some of the main roads were open on Tuesday, December 14, even on the following day progress was very slow, largely because of vehicles being stalled. A five-ton Pierce-Arrow truck loaded with emergency supplies left the Central Storeroom at Bethune street, New York, about 3 A.M., Wednesday, arriving at White Plains at 1 P.M., having been on the road ten hours to cover a distance of less than thirty miles.

As usual, in such emergency cases, every effort was made to restore service with a minimum delay. On Tuesday, December 14, thirty-nine tons of emergency supplies were shipped from the Central Storeroom. About twenty men from the Manhattan District and seventy-five from the Long Island, New Jersey, and Central Divisions, were sent to Westchester to assist in the task of restoring service and making repairs.



Boston Main Line, Yonkers

Handling the Emergency in New Jersey

By I. J. Thorp, Division Plant Superintendent, New Jersey

WHILE the Plant and Traffic Departments of the New Jersey Division have had considerable experience in handling storm conditions, additional refinements were worked out in connection with the recent storm, and it is felt that a brief explanation of the manner in which an emergency condition of this kind is treated will be of general interest.

During the latter part of the afternoon, on December 13, the storm increased in intensity and the weather reports indicated a fall of six inches of snow during the night, with a gale of wind and colder weather on the following day. As soon as this cheerless information was received from the Weather Bureau, arrangements were made with the Traffic Department to have all chief operators keep their trunk service in close observation and report promptly to the Division Traffic Engineer of trunks found out of order.

By means of the Plant Department's trunk record showing the routing of all trunks, together with the information received by the Traffic Engineer's office from the various chief operators, it was an easy matter to determine which lines were being damaged and also the extent of the damage. By 6 P.M. enough reports had been received to indicate that the conditions were serious, and accordingly the Traffic Department issued verbal instructions to have a complete test of all trunk circuits made at 9 P.M. In this connection it has been found very essential to have all information reported by the chief operators in a normal manner and with as little delay as possible; consequently, the Traffic Department has issued to all district managers a supply of typewritten forms on which are listed in alphabetical order the names of all trunk circuits and the number of trunks in each group. Blank columns are provided in which can be entered the number of trunks remaining O.K. at time of test and numbers of the trunks out of order. A similar set of blank forms is maintained at the district headquarters, on which information is entered as it is telephoned from the district offices. The reports at six o'clock indicated that a considerable number of local trunks were out of service and that several of the more important switching offices were handicapped on account of a lack of toll trunks. For example, Dover had lost all Newark and Jersey Toll trunks; Hackensack and Englewood had lost all Newark Toll trunks, and a number of working Freehold and Lakewood Toll trunks had been reduced to one-half. With this information two important steps were taken at once.

Note the Heavy Sleet and Snow Clinging to the Wires, and the Difference When the Wires are Clear

1. Couriers were despatched to cover the most important open wire lines which were known to be out of service.

2. With the coöperation of the Division Traffic Engineer's office assignments were prepared and issued to wire chiefs for making such patches and cross-connections as would most advantageously

New York-Bedford Line, Carpenter Avenue, Bronx, Looking North

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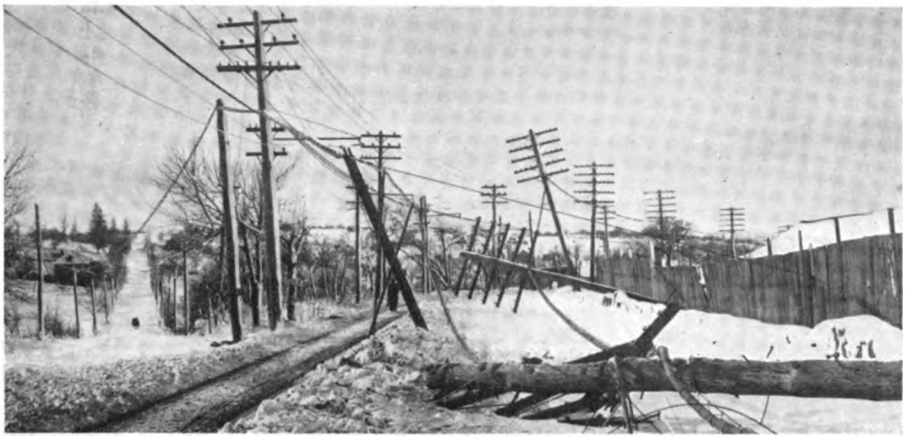
redistribute the trunk circuits which still remained in service.

To facilitate a clear understanding the following illustration of a single emergency patch is given:

Normally there is a considerable amount of traffic which is handled between Englewood and the Newark Toll board. The Englewood-Newark Toll trunks are ordinarily routed on open wire via Hackensack and Passaic. Certain sections of this open wire line were entirely destroyed, and consequently all Englewood-Newark Toll trunks were out of order. Between Englewood and the Newark Toll board, however, there is an all-cable route via Jersey City. In this case certain Englewood-Jersey Toll trunks were temporarily turned down by the Traffic Department, thus establishing spare conductors between Englewood and Jersey City, at which point they were cross-connected to spare cable conductors leading to the Newark Toll board.

White Plains-Portchester Line, Looking East, Portchester



White Plains-Tarrytown Line, Looking West, White Plains

It was, of course, necessary to make cross-connections at Market main frame, in order that these circuits might properly terminate on the Toll board. These cross-connections at Jersey City and Market required but a few minutes' work, and Englewood was again in communication with the Newark toll board by 6 P.M. Relief, similar to that which has just been explained for Englewood, was required at several of the more important switching offices, notably Hackensack, Ridgewood, Dover, Lakewood, and Freehold. In selecting working circuits for this relief work, three points are given consideration:

1. The selection of such circuits as can be used in making patches with the minimum amount of time and labor.

2. The selection of such circuits as will least interfere with traffic when they are temporarily discontinued.

3. The selection as far as possible of circuits which are routed in cable so that they will be less liable to interference when they have been established as temporary circuits.

Pole 65, White Plains-Tarrytown Line, White Plains

At 11 P.M. assignments had been issued and patches made to relieve for the most part traffic needs at the offices mentioned above. In fact, the emergency relief work had been carried to a point where any further patches would have meant the establishing of emergency circuits over open wire routes, and this was considered inadvisable, especially inasmuch as the nine o'clock returns from the Traffic Department indicated that one after another more open wire lines were failing.

In order to avoid any false work in the establishing of emergency circuits it was decided to defer further rearrangements until such time as the full extent of the damage would be known. Accordingly arrangements were made to have a complete test of all trunks made by the Traffic Department at 3 A.M. on Tuesday. The purpose of a test at such an early hour was to avoid any unnecessary loss of time in making further emergency rearrangements, in the event of the storm's having practically spent itself by that time.

The Traffic report was completed by 4.30 and representatives from the Division Plant and Traffic headquarters reached the office at about 5 A.M. and planned as many additional rearrangements as could be made to advantage with those trunk circuits which still remained in service. The assignments were issued and most of the work completed by the Wire Chiefs before 9 A.M., with the result that except for a few small offices which have only one route connecting them with the trunk system, practically all traffic was being handled on a "no delay" basis.

Conscience

TWO men were overheard in the train the other morning discussing what they termed a questionable transaction of another man. They waxed loud enough in their talk for us to hear distinctly what one of them said. It was this: "I've got my conscience to talk to at night, and it's a darn disagreeable bedfellow sometimes."

We assume that we all talk to our consciences at night, and have had the same experience with it.

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The Tying and Splicing of Copper Wire as Affecting the Quality of the Service

By W. H. Collins, Plant Engineering Department, Central

DURING the infancy of the telephone development, particularly as applied to that portion of the plant devoted to toll or long distance service, first cost was considered the main factor in the design of the open wire and pole line plant, and the importance of reduction of maintenance cost and continuity of service was not realized.

Many refinements have been introduced into the design of the plant, which have had an important bearing on the economy of construction and maintenance. Naturally, the larger companies have been the first to put these practices into effect, but to a great extent all companies are following the lead and a very desirable standardization of methods is being effected.

The handling of copper wire has an important bearing on the continuity of service. Sufficient evidence of this is always apparent in the causes of breaks due to cold. Such breaks are nearly always the result of kinks or nicks on the surface of the hard drawn copper wires, and these are caused by improper handling.

Importance of Tying and Splicing

The tying and splicing of copper wires is an important factor of continuous service, although perhaps receiving less consideration from the average lineman than should be the case.

Fig. 1.—Proper Splice from Which There Is Little Likelihood of Trouble

The splicing of copper wires with standard sleeves is a simple matter mechanically, and in the case of new wire, if done in a proper manner, does not present any particular difficulties. After the two ends of the wire have been placed in the sleeve, the ends should be turned up and cut off very close to the ends of the sleeve so as to prevent the sharp ends from coming in contact with the wire in the other tube of the sleeve. The sleeve should then be twisted with two pairs of connectors until the required number of complete turns are made.

Figure 1 shows a splice which has been properly made with the standard connectors. It has the correct number of turns or twists, and from it there is little likelihood of trouble.

Fig. 2.—Improper Splice in Which the Electrical Contact Is Apt to Be Unsatisfactory

Figure 2 shows an improperly made connection which has probably been made with pliers, and in which the electrical contact is apt to be unsatisfactory. In splicing copper wire which has been

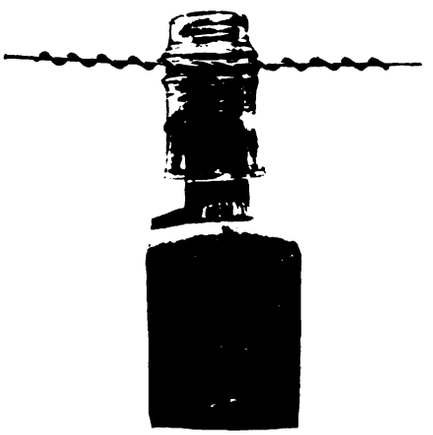

Fig. 3.—A Proper Tie from Which There Is Little Likelihood of Trouble

in service for any length of time and has therefore been exposed to atmospheric conditions which tend toward oxidization and corrosion on the outside surface of the metal, it is of the utmost importance that the wires be thoroughly cleaned before being inserted in the sleeve; otherwise defective joints will surely result. Insurance against this is obtained by polishing the portion of the wires which come in contact with the interior of the sleeve with fine emery cloth before the sleeve is put on.

Defective Joints

It may possibly be proper at this point to consider the results of defective joints, such as may be caused by improperly constructed splices. With the development of high-voltage power transmission lines and other factors which tend to cause disturbances in telephone circuits, and the increasing use of phantom circuits in which such disturbances are amplified, a perfect balance between the two wires of a circuit has become almost an absolute necessity. "A perfect balance" means that the two wires of the circuit must have the same resistance throughout their length. Lines which are not balanced, when subjected to the influence of foreign currents, are noisy and unsatisfactory, because of a displacement of the neutral points of the circuits. This effect is particularly noticeable in the case of phantom circuits which are much more susceptible to external influences than ordinary circuits. In phantom circuits also the requirement for a perfect balance is much more severe.

A case of this nature recently came under the writer's observation. A phantom circuit was to be established and the wires had been transposed and preparations made to cut the phantom into service. The final test indicated a difference in the conductivity of the two wires of one of the physical circuits, amounting to about two ohms. This unbalance was finally traced to one splice, upon the removal of which a perfect balance appeared without further difficulty. This splice had not been properly made, nor, apparently, had the wires been cleaned before the sleeve was placed.

Locating Trouble

There is another important reason why it is so necessary that perfect conductivity be insured; in the location of trouble, the test board operator has recourse to calculations which assume a uniform condition of resistance, and in the event of any appreciable variation his calculations will be misleading and the location assumed may be found considerably at variance with the fact.

Fig. 4.—A Tie Improperly and Carelessly Made

If there are several defective splices in a circuit, the fact may not be apparent from the ordinary tests, as the defects may balance each other, although located at points a considerable distance apart. This, it will readily be seen, may lead to large errors in the location of troubles.

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Tying Line Wire to Insulators

Many different methods of tying the line wire to the insulators have been tried and discarded. Some of the telegraph companies have used a single sleeve over the line wire, the center of the sleeve being opposite the center of the insulator and the tie being placed over the sleeve. The method at present in use is considered the most economical both from the standpoint of construction and maintenance. It consists of the simple operation of laying the line wire and tie wire in the groove of the insulator, passing the tie wire entirely around the insulator once, one end being brought down over and the other end brought up under the line wire in opposite directions, and the two ends being wound five times around the line wire.

Other Features

There are some features of this work that are deserving of attention, viz.: a satisfactory tie will not result if anything but new, thoroughly annealed, copper tie wires of the same gauge as the line wires, are used. Sometimes improperly annealed wires may be found, and in some cases where workmen run short of tie wires it has been the practice to use line wire cut up into the proper lengths and heated in a bonfire built in the vicinity of the work. In other cases tie wires have been re-used. Without considering in detail the results of this class of workmanship, the invariable failure to hold the wires properly in place has a detrimental effect upon the service.

Fig. 5.—Effect of Snow, or Sleet, or Other Heavy Strain on a Poor Tie

Proper and Improper Tying

Figure 3 shows a copper line wire tied to the glass in the proper manner. The tie wire has been given the required number of turns and the ends cut off neatly. There is little likelihood of trouble resulting from a tie placed in this manner.

Figure 4 shows a tie which has been improperly made. In this case, it is evident that an old tie wire has been used, as it was too short for the required number of turns.

Figure 5 illustrates what happens where the ties have been improperly or carelessly made, when the line wires become loaded with heavy snow or sleet, or are otherwise subjected to an unusual strain.

Another important factor related to this subject, is the position of the line wire on the insulator. On straight line work the line wire should always lie on the side of the insulator next to the pole, except the two inner (pole pin) wires which are placed in the side away from the pole. On curves, however, all line wires should lie on the side of the insulator away from the center of the curve in order that the strain may be taken by the pin and insulator instead of by the tie wire.

Grades

Owing to the fact that it is not practicable to build a pole line over any route without angles and curves, and that it is impossible to establish a grade that will be uniform and avoid dips and rises within certain limits, it can readily be seen that much rests on the integrity of the tie. During the winter months, or in heavy windstorms, the strain on the wires is greatly increased, and loose tie wires are then productive of troubles which may be cleared only after considerable hardships on the part of the repair man, to say nothing of the expense or loss of service which is occasioned.

By Way of Contrast

THE standard by which blizzards are measured was established nearly twenty-eight years ago on March 12-14, 1888. No snow fall since that time has quite come up to that mark. There have been, however, some strong contestants for the honor, the most recent occurring on December 13, 1915. The accompanying photographs, taken from about the same spot on Main street in Poughkeepsie looking toward the Morgan House, offer an excellent opportunity to compare the volume of snow which fell in the two storms.

The two views are also interesting as depicting some of the changes which time has wrought. Perhaps the most noticeable is the disappearance of four heavy lines of poles, one of which rose with its eight arms above the highest building, and the appearance in their place of two rows of ornamental light and trolley poles.

The telephone wires have gone underground, where they performed noble service during the recent storm when all means of transportation were at a standstill.

We are indebted to Mr. Thomas H. Ransom of Poughkeepsie for the older picture.

E. N. BULL, *Local Manager, Poughkeepsie.*

The Blizzard of March 12-14, 1888 — The Snow Storm of December 13, 1915

COMPARISON BETWEEN TWO SNOW-FALLS IN POUGHKEEPSIE

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Portion of "A" Switchboard, Farragut Central Office

Thirty-fourth Telephone Exchange in Manhattan-Bronx

By J. S. Miller, District Inspector, Central Manhattan

FARRAGUT central office was cut into service on the evening of Saturday, November 13, 1915, at 9.30 P.M. Within an interval of a few moments, 2,231 lines and 3,697 stations were severed from their old offices, Chelsea and Madison Square, and connected to the new. In this short time, the work of the Engineering, Traffic, and Plant forces, extending over a period of many months, was brought to a successful conclusion, with only momentary interruption of service on each line, as every one was accounted for, tested O.K., and was ready for service on the final test made immediately after the cut-over.

It should be stated here that all of the lines cut into Farragut on the opening night were originally lines from the Madison Square district, for although 945 lines and 1,682 stations of those above mentioned have been operated through the Chelsea central office, with Farragut designations, for the past year, they were Madison Square lines until that time. Madison Square, on the opening of the Murray Hill central office, March 9, 1913, also gave, as its complement to that office, 1,781 lines and 4,336 stations. It will, therefore, be seen that Madison Square has given up 4,012 lines and 8,033 stations in less than two years, and, notwithstanding, now has 7,309 lines and 20,339 stations in service. These figures indicate the rapid growth of telephone lines and stations in the Metropolitan Division.

Farragut central office takes its place as the thirty-fourth office in the notable group in the Manhattan-Bronx district, through which approximately 192,500 lines and 445,500 stations are served. The office is located in what is known as the Chelsea Building, at 350 West 17th street. The operating room is on the fourth floor of the building. Two floors above is the Chelsea operating room. Between, on the fifth floor, is the terminal room for both offices.

A new type No. 1 Western Electric Company switchboard, capacity of 10,500 lines, having 66 "A" and 30 "B" positions, with equipment for 6,600 subscriber lines, was installed. There are now working in this switchboard 476 incoming and 715 outgoing trunks, which were cut in and O.K.'d previous to the cut-over. An interesting feature in connection with this switchboard is the arrangement of the "B" position grouping keys. These are individually mounted at each "B" position. This simplifies the grouping of "B" positions and associated incoming call circuits, as changes in grouping can be made at the positions by the supervisors without leaving their sections.

Instead of providing a separate main frame for the Farragut office, the Chelsea main frame was enlarged, and all Farragut lines were terminated thereon. The frame is now equipped with 113 protector strips, having a capacity of 45,652 pairs of protectors, which will accommodate an equal number of subway cable pairs. This common frame was provided as the Chelsea-Farragut central offices will be operated by the random method, *i.e.*, the Chelsea-Farragut districts will be considered as a unit and new stations,

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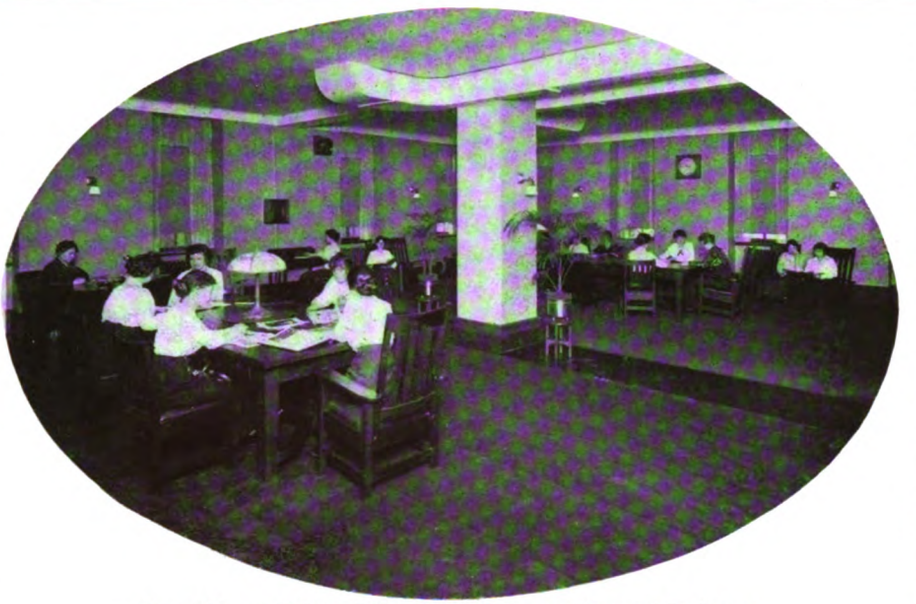
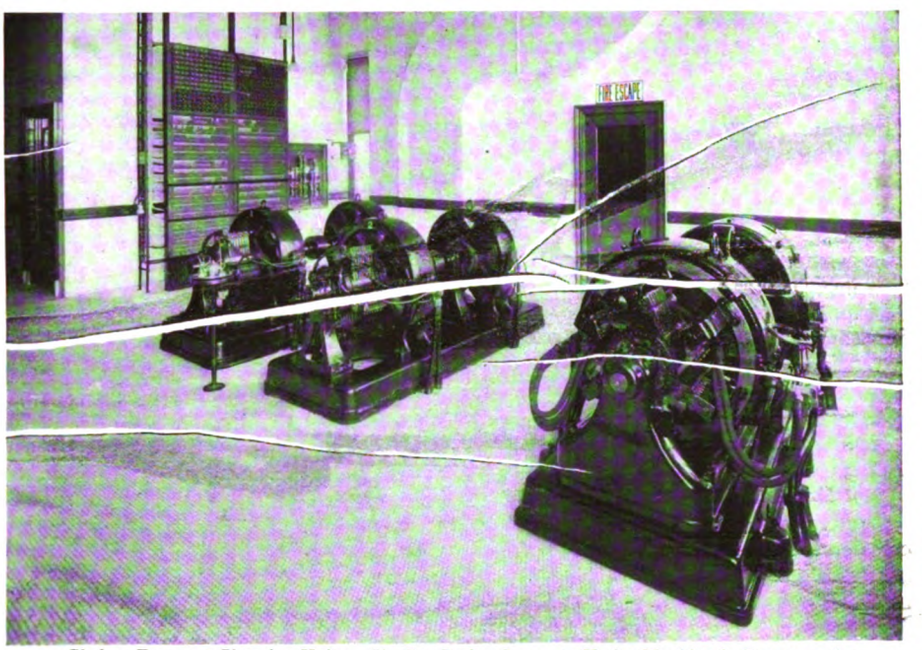
irrespective of their locations in the district, will be terminated in either office, as conditions warrant.

The Chelsea-Farragut power plant presents a number of interesting features. A new 1,000 ampere charging unit of the Western Electric Company's M10 type was installed. This unit is mounted on six car spring supports, thus reducing vibration to a minimum. The power switches and associated cables were also rearranged, so that it is now possible to use the Chelsea charging units, as well as the new unit above mentioned, to charge either the Farragut or Chelsea storage batteries, as conditions may require. A choke coil of the Western Electric Company No. 2 type, weighing 3,000 pounds, having a resistance of only .00048 ohms, and a capacity of 1,000 amperes, was installed in the Farragut charging circuit. A similar coil was also installed in the Chelsea charging circuit.

A separate room has been provided for the new Farragut storage battery. A new feature in connection with the battery is that the battery tanks are mounted on oil insulators, consisting of porcelain pedestals, on top of which are glass insulators filled with oil over which are placed lead caps to keep out dirt. A new 11-cell type "F" battery, known as the 48-volt battery, as it is in series with the Farragut storage battery, is also installed in this battery room. The 48-volt current obtained from these two batteries is used in the transmission circuit of the long distance and toll trunks in both the Chelsea and Farragut offices.



Commodious and Cozy Sitting Room, Chelsea and Farragut Exchanges



Chelsea-Farragut Charging Units. Six Car Spring Supports Under Machine in Foreground

Portion of Farragut "B" Switchboard

Owing to the increase in the size of the operating force, new dining, locker, and sitting-rooms have been provided for the operators. These rooms occupy an entire floor of the building.

As Farragut is equipped with the new standard unit type line and cut-off relays, it was necessary to resort to other than the taping method of blocking relays in connection with the cut-over. For the purpose the Western Electric Company furnished special brass punchings. These were strung ten to a strip. By pulling the strings, the punchings were quickly removed at the time of the cut-over. The punchings were actually removed at the rate of 250 per man per minute. These punchings require a correct adjustment of the cut-off relays in order that they may be properly set in position.

A large volume of work was necessary on account of the Farragut cut-over. A few items in this connection follow:

Twenty thousand feet of new 909-pair subway cable were placed in service in the plant. Seventy-five thousand subway cable pairs were either spliced, bridged, or thrown. Four thousand main frame cross-connec-

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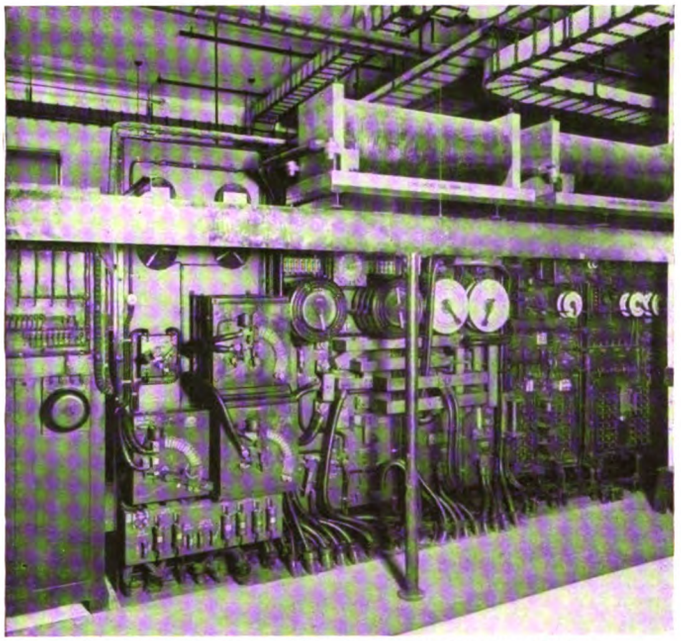
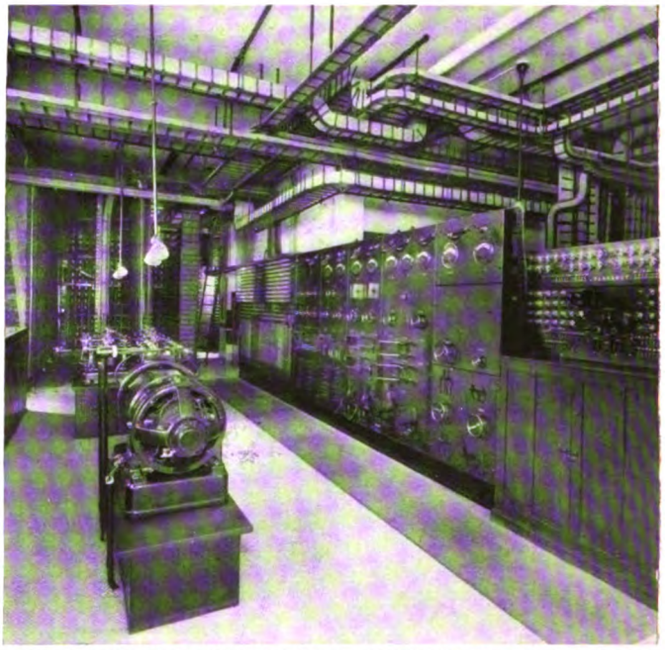


Rear of Chelsea-Farragut Power Board, Showing Choke Coils

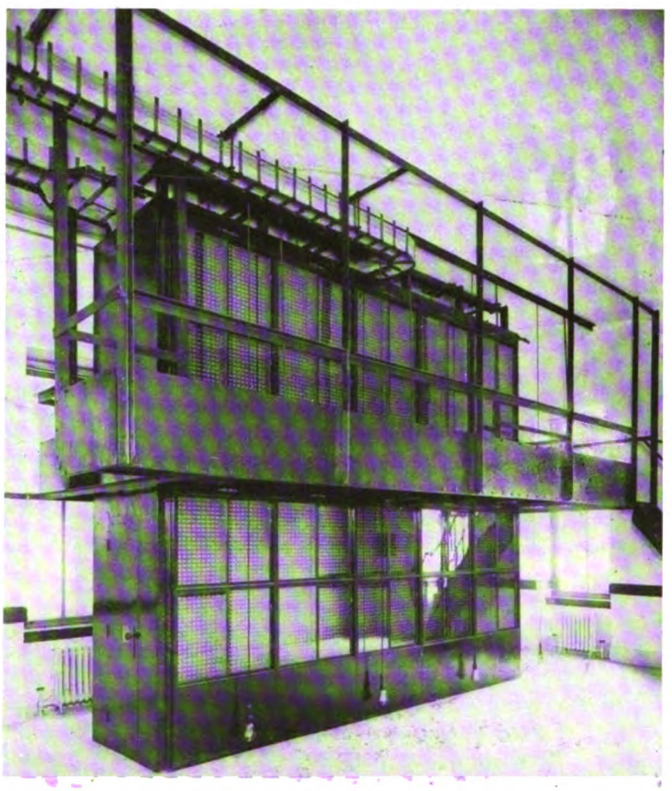


Front of Chelsea-Farragut Power Board. Charging Unit for 48 Volt Storage Battery in Foreground. Ringing and Register Units Behind

tions were cut in at Farragut. Two hundred thousand feet of double distributing board wire were required for this purpose.

The opening of the Farragut Central Office, together with the transferring of Hanover lines from Broad to Beekman, which occurred on the same night, necessitated an extensive rearrangement of trunks and call circuits in the various Metropolitan central offices in order to provide spare equipment for new trunks. In this connection, approximately 8,000 main frame cross-connections were cut in or transferred in the various offices within a period of about one week prior to the cut-over. These rearrangements were completed without interference to the service. Close coöperation between the various wire chiefs was necessary in carrying the work to a successful completion and great credit is due them for the thoroughly satisfactory way in which the work was handled.

As stated before, the Farragut cut-over was executed without error. Construction Foreman Barr, Wire Chief Larsen, and the forces under them are to be congratulated on the showing made. It is also proper that mention be made of the excellent work done by the Western Electric Company workmen, under the supervision of Foreman Elrod. The switchboard and associated apparatus was turned over in practically perfect condition.



Chelsea and Farragut Register Racks

Taking a Personal Interest

THE salesman who cares for the interest of those whom he serves (his patrons) may accept a certain amount of worry, but he also harvests a great amount of joy. The most fun in business is in liking it—and the salesman who goes mad *over* his work is more free from a breakdown than the salesman who gets mad *about* it.

Personal interest in those served is the same to salesmanship as the Pelton water wheel is to a waterfall. That little turbine wheel gets the energy out of the falling water and distributes it to where it can be used, by means of a dynamo, wires, etc.

Personal interest is the voltage of salesmanship—the creed of faith that makes a salesman feel that he has not done his *best* until he has done his *utmost*—has not simply grubbed out an order, but has benefited the man that buys. That he has brought to that buyer the particular article of its kind which will give the greatest measure of dollar for dollar service.

Willing salesmanship takes the salesman out of the working class and puts him in a profession. The salesman who wants to win for his customers, is going to win for himself. Talent for selling is honest, determined effort, not inspiration. The salesman who is set on worthy success, day in and day out, is certain to find enthusiasm is keeping step with him.

The more a salesman concentrates on his desire and determination to serve, the more he will win. The mind—like the body—has only so much capacity. If that capacity is taken up with indifference or doubt, even to a partial extent there is going to be less room for achievement.

Personal interest is as necessary in salesmanship as use is to money.

Personal interest gives employment and direction to those powers of body and mind that can aid salesmanship, and the factory of personal interest is a manufacturing plant that produces the most. The salesman who wants to serve those to whom he makes sales, finds that his harvest is not "Dead Sea Fruit," but marketable results.

Every man is a gold mine unto himself. Dig in and get the ore.—*Ford Times.*

When you make a mistake, don't look back at it long. Take the reason of the thing into your own mind, and then look forward. Mistakes are lessons of wisdom. . . .

The Past cannot be changed. The Future is yet in our power. HUGH WHITE.

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Lotos Club Honors Mr. Carty

Personal Tributes from Friends and Associates at Dinner November 27

THE Lotos Club Dinner, given to Mr. J. J. Carty on November 27, in the opinion of many of the oldest members of this famous club was one of the greatest functions and most notable occasions in its history. To be the guest of honor there, is one of the foremost distinctions which a man of achievement in any line can receive. Of the honors conferred upon Mr. Carty during many years, none probably has been more appreciated by him than this from his fellow-members in the Lotos Club.

In introducing Mr. Carty, President Lawrence said, "To-night we turn aside to greet a man of science, and we congratulate ourselves that he is a member of the Lotos Club." This pride was no doubt mutual. In concluding his address, President Lawrence proposed a toast to be drunk standing, "in good Lotos Club fashion, to the long life, health, and prosperity of our friend, fellow-member, and guest, Mr. John J. Carty." Mr. Carty's health was drunk amid great and prolonged applause.

Original Steel Engraving Designed and Executed by Mr. T. Sindelar, a Member of the Lotos Club, and Presented by Him to Mr. Carty

Then Mr. Carty made the diners his guests at a transcontinental and wireless telephone demonstration that has never been equalled. When he rose to respond to the applause which followed, Mr. Carty in a "characteristically modest speech" (to quote Mr. Bethell, who spoke later) said in part:

After such a magnificent and flattering reception and such a dinner as this, it would be difficult for any man to find in his vocabulary words to express the feelings in his heart. I would be unworthy of any attention from you whatever if I made the mistake of taking all or a major portion of this demonstration as intended for me personally. . . . I know that under my charge I have the finest group of telephone engineers that exists in the whole wide world, and I know that without the work that they have done, none of these telephone demonstrations that you have participated in tonight would be possible . . . I am going to mention a very few names of the men engaged in the great work . . . and it is my great privilege to have worked with them, and have them work with me. Were I to read the names of everybody who had to do with these achievements, it would take all night.

Mr. Carty then gave the names of some of the men, praising the work they had performed: B. Gherardi, F. B. Jewett, E. H. Colpitts, H. D. Arnold, B. W. Kendall, John Mills, R. A. Heising, C. R. Englund, O. E. Buckley, H. E. Shreeve, A. M. Curtis, W. Wilson, R. H. Wilson, R. L. V. Hartley, Lloyd Espenschied, G. A. Campbell, F. A. Stevenson, A. W. Drake, W. J. Hoar, William Fondiller, E. B. Craft, O. B. Blackwell, H. S. Osborne, R. S. Hoyt, Thomas Shaw, C. A. Robinson.

Following Mr. Carty, Mr. Vail was called upon to speak. He referred to Mr. Carty as "Our Carty" and said:

Those of us associated in the organization are glad to be coupled with our distinguished associate, and we are very proud of our Carty, and are glad to do anything that honors him. . . . This tribute from this Club is unique in that it is not a scientific tribute from fellow-scientists, not a commercial tribute from corporations or associations, but a tribute from fellow-citizens to one who is recognized as having made business and social intercourse more easy, more comfortable, more agreeable; and as one member of the associates who claim Carty as our own, I want to express to you, Mr. President and gentlemen of the Lotos Club, our hearty appreciation.

Col. Samuel Reber, as the United States Army representative in the recent experiments in wireless telephony, and Capt. W. H. G. Bullard, president of the United States Navy Radio Service, both paid high tributes to Mr. Carty and his associates. In his remarks Captain Bullard said:

I am . . . grateful particularly for having this opportunity to record in your presence my personal appreciation of his efforts and those of his efficient group of engineers in the development of a practical form of wireless telephone.

Secretary Daniels of the Navy paid this tribute to Mr. Carty:

It is a gratifying thing to see a man achieve what will bless the world and in his young manhood receive the recognition for it. . . . Emerson has told us that if a man writes a better book, if he can preach a better sermon, if he can make a better candlestick than anyone else, though he may make his home in the woods, the world will beat a trodden path to his door. To-night we stand and the world will stand beating a path to the door of our distinguished friend whom this club honors and, honoring him, honors itself.

Mr. Bethell spoke of Mr. Carty as "decidedly human." He said:

I wish it were possible for me to tell you of the traits of heart and mind which have endeared him to his associates. I wish I might tell you of the initiative, the ingenuity, the foresight, and the energy which have always characterized him, and which are essential to success always. . . . When we think of honesty, patriotism, and other splendid qualities which are always admired, when we recall that the chief end and aim of human endeavor is the perfection of character, we always think of individual honesty, individual patriotism, and individual character; but I know through a long association with Carty and other men like him that there are such things in the world as corporate honesty, corporate patriotism, and corporate character.

Dr. Frank J. Sprague, former president of the American Institute of Electrical Engineers and one of the present consulting board of the United States Navy Department, spoke of the demonstration of transcontinental and wireless telephony given at the dinner as "the most marvelous exposition of the electrical world that has ever been seen." Referring to Mr. Carty's election as president of the Institute this year, Dr. Sprague said they chose Mr. Carty

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"not alone because he was a great inventor, but because he happens to represent in the electrical world the absolute maximum of technical efficiency, . . . he stands to-day perhaps the highest type of electrical engineer."

Mr. John Palmer Gavit, managing editor of the New York *Evening Post*, closed his "eulogistically humorous remarks" anent the occasion by reading the following original poem:

TO JOHN J. CARTY

When I consider how my life is spent
Answering the telephone from dawn till bed,
Din in my ears and baldness on my head—
And now I hear this Carty person's bent
On bringing conversation from the Orient,
I am not glad;
And after I am dead,
When from this hell of telephones I'm sped,
I shall return and sit outside his den
And curse him for the instrument he gave
To every nuisance in this world of strife.
I'll murmur his *real name* from time to time.

I here denounce him, a Pestiferous Knave,
A fell disturber of the Peaceful Life!
I now invite him to a Warmer Clime.

After the dinner and before the speeches, which closed the evening, Mr. Carty gave the demonstration of telephony.

First, connection was established with San Francisco, and Mr. Carty called the roll of wire chiefs along the route, to the amazement of the guests, each of whom was supplied with a receiver and could hear the conversations. Forty or fifty members of the Bohemian Club in San Francisco participated in the demonstration at that end of the line.

Mr. Lawrence, president of the Lotos Club, talked with Mr. Deering, president of the Bohemian Club, and he was followed by Mr. Melville E. Stone, who talked with Mr. Deering and also with Mr. Joseph Redding.

Connection was later established with Rear Admiral Blue, Acting Secretary of the Navy, at his home in Washington, and he talked over the wireless with Mr. Carty, President Lawrence, Secretary of the Navy Daniels, and Captain Bullard. Admiral Blue talked by wire from his residence in Washington to the Arlington Navy Tower, thence by wireless to the radio tower on the Western Electric Company's building in New York, and from there by wire to the Lotos Club. The Star Spangled Banner was played by a cornetist at the radio station at Arlington, the entire company standing and holding the telephone receivers to their ears the while. The return conversations were over the long distance line, direct from the Lotos Club to Admiral Blue's residence.

At ten o'clock at night the Navy Department sends out by wireless from the radio station at Arlington, time signals to Honolulu and to ships at sea, so they can set their chronometers and have the time correct to the second; Mr. Carty had arranged for these signals to be heard at the dinner. The first signals were given just before ten o'clock, the last fifteen seconds being ticked off distinctly and the final one being louder and somewhat prolonged.

The guests put down their receivers and applauded Mr. Carty. Then President Lawrence arose and said: "It is impossible adequately to enjoy this wonderful demonstration."

The Telephone in Great Britain and America

Extracts from Speech of British Postmaster-General

MR. HERBERT SAMUEL, Postmaster-General of Great Britain, upon taking office as president of the London Telephone and Telegraph Society on October 25, delivered an address at the opening of the meeting. Mr. Samuel spoke of the hindrance which the war has been in the carrying out of plans and policies of the Government. He said that when the war is over, the time will come for a general revision of the whole of the telephone rates of the country, which he thinks will contribute to the extension of the use of the telephone among the population at large.

He paid his respects to the telephone companies in the United States and the American people as telephone users in the following words, which we quote from the December issue of the *Telegraph and Telephone Journal*, published under his official patronage:

The development of the Telephone service to which we had all been looking forward with such great anticipation has necessarily to be in abeyance; there is neither capital nor labor available to supply the equipment which is needed for its extension. But while development is stopped the opportunity can be taken to perfect organization.

Well, I venture to think that the British Telephone Service has still some road to travel before it is in all respects as highly efficient and perfect as the telephone service of the United States, which has always been held up to us as a model, and which so far as I could judge during my visit to the United States two or three years ago had certainly reached a very high standard of perfection. For that the American people have to thank not only the telephone companies, but also themselves. The public there has been educated to be a good medium for telephonic communication, so to speak; and I have no doubt that the telephone habit being so ingrained among the American people, and the characteristics and temperament of the American mind lending themselves so greatly to making the best use of every form of mechanical contrivance, have contributed very much indeed to the high standard of the Telephone Service of that country. Still, I am quite convinced that, although in this country we are always a little slower to develop than some other nations, the time will come when the standard of the British Telephone Service will be as high as that of any other country in the world.

Regarding telephone rates he is quoted as follows:

The service will perhaps be in some ways affected by the Budget changes in telephone rates, but I do not think that it will be affected to any serious extent. The flat rate has been increased, but so far without any very serious effect on the traffic, and in all probability the trunk traffic is not likely to be very greatly affected by that change. Probably the normal growth will bring it back to its former dimensions in a very brief time. With respect to the ordinary rate for measured service I am, myself, most strongly opposed to any increases, and would resist any suggestion that might be made in one quarter or another for an increase in the charges for ordinary telephones. I hold the view very firmly that this country is much under-telephoned. The telephone development so far is merely a beginning, and it ought to be multiplied many times before we reach the right standard of development here; and so far from imposing any increase in the charges of ordinary subscribers' telephones under the measured rate, I should desire to see modifications in the other direction with a view to encouraging very largely the extended use of the telephone.

The increase of telegraph rates has been, unfortunately, inevitable in view of the losses that have continued for so many years in the telegraph service, but I am hopeful, there again, that the diminution of traffic will not be very large, and possibly may be remedied by later growth.

It will be noted that in England as in this country the flat rates must be increased as the exchanges grow and the volume of traffic increases, whereas, with the message rate, or, as they term it, "the ordinary rate," the reverse is true. Such rates can be maintained without any increase, and, in many instances, may be materially reduced with the enlarging of the exchange and the growth in volume of traffic. Aside from this beneficial fact, the message rate offers the only hope for increasing the growth of the exchange through the small user being permitted to pay a rate within his reach—a rate based upon use.

It is gratifying to have Mr. Samuel so strongly indorse the efficiency of our system and to commend our American public, and it is more gratifying still to have him so strongly approve and adopt our message rate plan.

UNCERTAIN

"Gee! It's de boss!"
"Is it? Well, dat's de wust of dem telephones—yer can't allus tell who yer sassin'."—*Bush Idea.*

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Publicity

Extracts from an Address

By N. C. Kingsbury, Vice-President, American Telephone and Telegraph Company

MR. N. C. KINGSBURY, Vice-President of the American Telephone and Telegraph Company, delivered an address on the evening of December 1 at the Hotel Astor, on the subject, "The Investment Side of National Publicity," before the Association of National Advertisers.

Mr. Kingsbury said in part:

WITHOUT the press, the greatest medium of publicity, we could not even approach the accumulation of knowledge necessary to live on the plane demanded by our civilization. For a few cents we procure almost anywhere, at any time, the news of the world in the papers, and the product of the best brains in the world in the magazines. We may wonder how the publisher can continue in business, furnishing the daily paper at one cent, or the magazine at from ten to thirty-five cents. How can he afford to give us so much for so little? The answer is obvious in this presence: the advertiser, the one seeking publicity, pays the greater part of the cost for the reading public.

The development of that form of publicity which we call advertising is one of the very remarkable things in this age. Only a comparatively few years ago, a thousand dollars spent in advertising would have been considered reckless, while to-day there are many interests expending a million dollars a year in their advertising campaigns, and the necessity for advertising, from a business standpoint, seems to be growing.

When we consider that each year, now, something over seven hundred millions of dollars is spent in this country for publicity, we can get some idea of the importance of return upon this investment not only to the investor himself but to the public at large, which finally has to pay the bill.

There is a kind of publicity which is so important even to our government and the business interests of our day, so much discussed in the press and from the rostrum, that even the old word has taken on a new meaning. I refer to that form of publicity which has for its object the formation and control of public opinion. This, indeed, is the one great purpose and end of our modern publicity.

The world to-day is ruled by public opinion. Almost without exception the governments of the world are governments by public opinion. The aggregate of private opinion gives us public opinion, which in nations finds expression in the form of government, the selection of officials and the adoption of codes of manners, morals and laws.

Business interests, in my opinion, have been entirely too slow in appreciating the necessity of publicity and its influence on public opinion, and I believe that fact is responsible for much of the distrust and suspicion which have arisen in the past with respect to business affairs. Many business institutions have doubtless suffered from hostile publicity, from sensationalism. In most of such instances, the fault, in my opinion, has been with the secret methods employed and the constant suspicion and danger of misrepresentation.

A new era in publicity, in advertising, seems to have been inaugurated in the business world, and I am sure that those of us who are in constant touch with the various methods and purposes of publicity will hail with delight indications of great improvement which have taken place in the last few years.

To my mind, gentlemen, there is much more in advertising than the mere securing of customers, and in the broadest consideration of this subject the securing of customers, while of course a necessary process in carrying on any mercantile or manufacturing business, is after all but an incident in the great, broad scope of publicity. And I would go further, and say that if advertising is dishonest, fake advertising, the securing of customers may turn out to be the very worst thing that could happen to the institution purchasing the advertising.

And so publicity should be ever a builder of public opinion, of reputation, directed not only to the immediate present, but also, and perhaps more especially, to the future. With proper, honest advertising, this is possible and indeed inevitable. No great business was ever built up on the "fire sale" method of publicity.

Take the corporation which I have the honor to represent. We spend large sums of money every year in our national advertising, and yet we do not advertise for the purpose of inducing people to install telephones or to talk over our long distance lines. Not at all; we advertise because we became convinced some years ago that the public at large knew very little about our business, of its problems, of its purposes, of its ideals, of its difficulties; and we have been trying to educate the people of this country along those lines. If we were looking at the narrow, direct return from this investment in advertising every year, of course we could not trace it. It would be absolutely impossible for us to key our advertisements so as to note direct results, but if you should come to me and try to purchase the benefit which we have received from a more enlightened public, the benefit in a better understanding of what we are really trying to do for this public, of what our problems are, then, gentlemen, you would find that you would have to pay many times more than we have spent on all of our advertising and publicity campaign. No one could calculate the value, although the benefits are apparent in hundreds of different ways.

Let me emphasize this: I wish there were some way, for instance, in which we could make known to the American people that as a corporation we seek to be absolutely fair and honest, that we are above graft, pettiness, discrimination, that we have before us a lofty ideal of civic service in supplying the means for universal communication, that we do not seek an unusual or unjust profit. Now, all those things are absolutely true. What do you think it would be worth if we could convince everybody in this country that those statements are true? Now, that is exactly what we are trying to do in our publicity and also in our treatment of the public.

We are not alone or unique in this attitude. Indeed, I believe it is the general attitude of business men to-day. But in order to convince people of that fact we have got to keep reiterating it over and over again in thousands of different ways through thousands of different mediums. But the return on such an investment is valuable beyond all calculation.

One of the most pleasing results of the improved sentiment with respect to advertising is found in the character, the ability, the position in society, of the advertising and publicity man himself. If a man is dealing with lofty, truthful, earnest things, he partakes of those things in his own character and life, while if he is dealing with things which are low and mean and untrue, he cannot but be personally affected to his detriment. So, gentlemen, I congratulate you upon your improved estate.

The right kind of publicity imparts information. It is educational and must necessarily be so if it produces any result. It requires the highest possible grade of definite, terse, true statement. It requires reiteration, over and over and over again, in every attractive form possible. One does not tell a child that this letter is "A" and expect that child

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to know that fact for the rest of his life, but that simple truth has to be reiterated over and over and over again, as does any other fundamental idea. And so it is in our advertising, in our publicity. Reiteration in hundreds of varied forms must constantly be employed in order to drive home a fact or an idea, just as there must be a large collection of the small blossoms of the thistle to attract the insect.

Now, all this advertising and publicity is bound to produce returns in a financial way which will make some men rich, and if you, gentlemen, do not believe in wealth, logically you are mighty poor men to place advertising. Few men ever became rich without publicity and advertising. For an institution or a product to be known to a great many people is a source of wealth, a spur to production, an invitation to constructive energy; and when a man comes along who by initiative and foresight and hard work can combine the various elements of production with the result that something is produced which many need, and then lets the many know of that fact and thereby becomes rich, let us not try to pull him down because of his success. Let us admire construction, which is one of the elements of your craft, and not destruction, about which no one wishes to write or speak or even know. There will always be giants, in physique, in intellect, and in energy. Their existence and their great work should be encouraged and the facts concerning their products and their careers should be advertised.

Transcontinental Demonstrations

PROBABLY no scientific achievement in recent years has attracted so much attention as has the Transcontinental Telephone Line since it was dedicated to the use of the American people on January 25, 1915. When it was being demonstrated at the Panama-Pacific Exposition, almost as many people were turned away as gained admittance to the American Telephone & Telegraph Company's exhibit building. Newspaper comment regarding the line has been widespread. Here in the East the demonstrations in the New York Telephone Company's territory have won unstinted praise from several thousand people whose eager acceptance of the Company's invitations clearly show the approving attitude of the public.

If further proof of the popularity of transcontinental telephony is needed, we have but to point to that song success of the season, "Hello, 'Frisco." To-day the song writer comes close to being a prophet of popularity. He melodizes according to the thoughts, ideas and emotions of the public and the success of his work depends upon his ability to strike the popular note. The public approves of "Hello, 'Frisco" and seems sure to like the new song, "Hello, Hawaii, How are You?" For one reason, these songs recognize the comfortable pride the public feels in the achievements of its men of science.

In the early 90's, when the Telephone Company was trying to show the public the commercial advantage of telephone service between New York and Chicago, no "Hello, Chicago" songs were sung and people displayed no great eagerness to test or to use the new telephone line between the two cities. This lack of interest was the reason for the creation of "Room Nine," that famous place of Oriental rugs, rich draperies, and other last-word comforts. Cabs even were sent to bring people to the room to talk over the wire to the Windy City.

Times have changed, however. The Transcontinental Telephone Line has quickly won a place in the thoughts of the American people. The pride of the nation has reached out and gathered to itself this coast-to-coast talk service which is American to the core and unequaled or even approached anywhere else in the world.

During the year the New York Telephone Company has given about thirty Transcontinental demonstrations before audiences numbering nearly 6,000 persons. The majority of these exhibits have been held in the directors' room of the American Telephone and Telegraph Company, on the fifteenth floor of the telephone building at 15 Dey street, New York.

The guests have represented widely different lines of activity. State and city officials in New York and New Jersey, bankers, railroad men, newspaper men and women, members of business associations, fraternal orders, college organizations, and representatives of South American States, all have talked to San Francisco. The transmitters and receivers have heard the sound of a baby's voice, and a State Governor's baby, too. They have heard the shrill speech of women who were nervous and excited at the thought of talking from New York to San Francisco; they have carried the businesslike expressions of bankers and newspaper men; they have caught the soft, flowing tones of the Spanish tongue, and the inflections of voice peculiar to different localities, and in each the varying shades of expression have indicated the changing thoughts and feelings aroused by the knowledge that the speaker's voice was traveling across the continent in one fifteenth of a second.

The list of demonstrations since the opening of the Transcontinental Line, with date, location and attendance, is as follows: March 23, at 15 Dey street, New York, newspaper men (40); March 26, at 15 Dey street, New York, newspaper women (13); May 6, at 15 Dey street, New York, prominent bankers (27); May 26, at Jersey City, N. J., Governor Fielder and a few friends (25); June 2, at 15 Dey street, New York, officials of the New York Edison Company (20); June 4, at the Executive Mansion, Albany, New York State officials—New York State Day (96); June 18, at 15 Dey street, New York, representatives at Pan-American Financial Conferences, South American countries (20); June 30, Brooklyn, city officials and distinguished citizens (275); July 13, at Asbury Park, N. J., Knights of Pythias (500); July 14, at 15 Dey street, New York, railroad officials (16); Aug. 19, at 15 Dey street, New York, city officials, distinguished citizens, and officers of most prominent organizations—Manhattan Day, at Panama-Pacific Exposition (70); Aug. 21, at 15 Dey street, New York, Delta Tau Delta (50); Aug. 27, at 15 Dey street, New York, Foresters of America (85); October 5, at the Hotel McAlpin, New York, the Rotary Club (400); October 21, at the Friars' Club, New York, the Friars' Club (150); October 21, at Orange, N. J., the Edison Laboratory (165); November 3, at Jamestown, N. Y., the Board of Commerce (500); November 11 at Troy, N. Y., the Rotary Club (350); November 12, at Albany, N. Y., the Rotary Club (350); November 16, at Rochester, N. Y., the Rotary Club (400); November 22, at Newark, N. J., the Board of Trade (600); November 24, at Oneonta, N. Y., the Chamber of Commerce (500); November 26 at New York, Ohio State University Alumni Association (250); December 2, at Glen Ridge, the Glen Ridge Congregational Church (300); December 4, at Paterson Y. M. C. A., the Rotary Club (400); December 17, Westchester Chamber of Commerce, Delmonico's (200); December 20, New York Academy of Sciences, Manhattan Hotel (175); December 21, New York Quill Club (200); December 22, Newark, N. Y. Board of Trade (600); December 29, Star Class Association Magazines, (80);

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December 30, Yale Engineering Association, N. Y. (325).

Exploiting coast-to-coast telephone service by inviting people to test the line for themselves has been of lasting benefit to the Telephone Company. It has given the public a greater appreciation of the usefulness of the telephone and of what the Bell System is trying to accomplish. People have come to realize that the telephone people are leaving nothing undone in their endeavor to give the American nation a universal telephone service.

Such statements as this are culled from the scores of letters received from guests at the various demonstrations of the line:

I appreciate more than ever your wonderful organization and what you are doing for the public. You are certainly "delivering the goods."

After the three-cornered demonstration for alumni of Ohio State University, when groups of Ohio State graduates in New York, Columbus, O., and San Francisco were linked by telephone, one of the men who was present wrote as follows:

All comment around the University to-day has been distinctly favorable. Besides appreciation for the courtesy . . . I have heard a number of men express the intention of making larger use of the telephone for long distance messages.

"It was an excellent exhibition of the efficiency of your 'continent wide' service," is the statement of one of those present at the Albany demonstration on June 4, when Governor Whitman at San Francisco heard the sound of his baby's voice come over the wire from the Executive Mansion at Albany.

Mr. William Gettinger, President of the Rotary Club, of New York, put his thoughts in this way:

The activities of that night have passed, but the memories—they will never pass away. We had one of the most instructive and educational sessions in the development and transmission of sound that has ever been given to the public.

Through force of circumstances, it was necessary to make a quick installation of the instruments used for this demonstration, which was held at the Hotel McAlpin on November 5. The room where the demonstration was to take place was not available until three o'clock that afternoon, but at one minute to seven that night the Transcontinental apparatus was in place. This work called forth the following comment by Mr. Gettinger:

All the care and forethought in the preparation of an affair of this kind could be easily knocked to pieces if the spirit of the rank and file was not coöperative.

One of the most interesting letters was received from Mr. A. B. Mallory, after a demonstration in Troy, N. Y. In this letter Mr. Mallory said:

I was somewhat prepared for remarkable things—we are living in an age when wonders never cease—but what impressed me most is the marvelous (I wish I could find a stronger word) efficiency and clocklike precision, the orderly sequence of its execution, and the touch of human interest in every phase of the demonstration. So far as I am concerned, the question of government ownership is settled; your company has justified its being just where it is and as it is.

Two other letters from Troy guests contained these paragraphs respectively:

The whole arrangement not only was a tribute to the competency of the men in charge, but reflected as nothing else could do, the marvelous accomplishments of the men who have been identified with the development of the telephone.

In the last analysis we might say the "Triumph of Science" is established and dedicated as one of the World's Wonders, only through the "Performance of Service."

The following quotation is from a letter received after the demonstration in Rochester on November 16:

You certainly could not have thought out a better plan to place before business men the usefulness and wonders of the present telephone system as carried on by your company in the United States. . . . It will do wonders in impressing on the mind of everyone the usefulness of the telephone and the wonderful strides it has made in the past thirty-eight years.

Showing the public the results of our work to perfect a universal telephone system in this country will surely be of lasting benefit to the Company and to the public. The public has gained a better understanding of the aims and policies of the telephone organization and the effect is already apparent in the closer coöperation between the users of Bell telephone service and those who furnish it. Transcontinental demonstrations have had and will continue to have an educational value that is almost incalculable.

What the Demonstrations Are

THESE demonstrations have been described in detail in previous issues of this magazine, and are interesting and educational in the highest degree.

A carefully arranged program begins with a lecture describing a series of motion pictures which carry the audience from New York through the principal cities and across the prairies, desert, and mountains, westward to the Pacific Coast, along the route of the Transcontinental Telephone Line. Views are given of the construction of the Line, of telephone buildings, and central offices, and of the men who conceived and directed this wonderful triumph of science. This is followed by the demonstration proper. One after another the wire chiefs in charge of the line are called up in turn—New York; Pittsburgh; Chicago; Omaha; Denver; Salt Lake City; Winnemucca, Nev.; San Francisco. As the voice of the Company's representative at the instrument traverses the continent and receives instant response from city after city, the audience, supplied with receivers so as to listen, is made to realize the speed, faster than that of light, at which the telephone has annihilated both time and space, for San Francisco is three hours earlier than New York by the clock, and 3,400 miles distant, yet the two cities are brought together in one-fifteenth of a second.

Musical selections are rendered, and members of the audience are allowed to speak to friends for a few moments,—an experience never to be forgotten. The demonstration concludes with motion pictures showing Seal Rocks at the Cliff House on the Pacific Ocean, while through the telephone the audiences may hear the roar of the mighty waters which they see before them on the screen.

In the Metropolitan territory these demonstrations are in charge of Mr. H. W. Casler, division advertising manager, and the lectures accompanying the pictures are given by Mr. W. F. Schmidt, special agent of the Advertising Department.

Ohio State University Association

NOVEMBER 26 was "Ohio State University Day" at the Panama-Pacific Exposition, and a three-cornered celebration over the Transcontinental Telephone Line was planned, in which 125 alumni in New York and about 1,000 of the faculty and undergraduates at the University, in Columbus, participated. About 150 alumni assembled in San Francisco. The demonstration in New York followed a banquet at noon. An unusual feature of the demonstration was the playing of "Carmen Ohio" on the chimes at the University. As the strains reached New York and San Francisco the enthusiasm was unbounded—

If on the seas of care we roll,
'Neath blackened sky, o'er barren shoal,
Thoughts of thee bid darkness go,
Dear Alma Mater—Ohio!

The Directors of the Panama-Pacific Exposition presented the Ohio State University Association with a bronze tablet commemorative of the occasion, Commissioner Charles A. Vogelsang making the presentation speech, and President Laylin, speaking from Columbus, making the speech of acceptance.

The program continued as follows:

President Bond of the New York Alumni Association then greeted the Columbus and

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Transcontinental Telephone Demonstration at Dinner of Ohio State University Association of New York, Park Avenue Hotel, November 26, 1915

San Francisco audiences, and expressed the hope that the growth of the University would continue as it has in the past and that its future will be a prosperous one.

Former Dean of the Agricultural College, Thos. F. Hunt, speaking from San Francisco, addressed the gatherings in New York and Columbus. In response, Professor Francis C. Caldwell, Professor of Electrical Engineering, Ohio State University, spoke from Columbus. Governor Willis, of Ohio, was applauded when he spoke of the wonderful work that Ohio State University is doing. The Governor, in response to questioning by the press of New York, was extremely tactful when he answered their questions on preparedness and Henry Ford's peace trip.

Others who spoke were: Mr. Albert H. Tuttle, formerly professor of Physiology and Biology at Ohio State University, speaking from San Francisco and representing the State Superintendent of Schools of California; Mr. Halbert E. Payne, president of American Typewriter Company and former president of the National Alumni Association, who spoke from New York; Professor Thomas Mendenhall, formerly professor of Physics at Ohio State University and later head of United States Geodetic and Coast Survey at Washington, who expressed his appreciation for having an opportunity afforded him to speak from San Francisco to Columbus and New York; Professor Joseph V. Denny, Dean of the College of Arts, Columbus; Chas. F. Scott, professor of Electrical Engineering, Yale University; Professor Geo. Knight, professor of Political Economy, Ohio State University; Ernest K. Coulter, secretary of the Society for Prevention of Cruelty to Children, and originator of the "Big Brother" movement, speaking from New York.

Once more was demonstrated to three appreciative audiences the value and possibilities of transcontinental telephony and "*universal service.*"

Glen Ridge

IT was a family gathering, that is, a church family gathering that assembled, in the Parish House in the Glen Ridge Congregational Church on the evening of November 30, to participate in an exchange of greetings with friends and former residents of Glen Ridge now in California, over the Transcontinental Telephone Line.

The 300 seats, each equipped with a head receiver, were all occupied when Mr. P. L. Thompson, president of the Men's League of the church, under whose auspices the demonstration was given, opened the program with a few remarks of welcome, and introduced Mr. H. G. Kerr, division commercial manager, New Jersey, as the master of ceremonies.

At nine o'clock Mr. Kerr opened the Transcontinental Line and Mr. G. W. Peck, Exposition Representative A. T. & T. Co., was introduced to the New Jersey audience. Mr. Peck stated he was very glad to have the opportunity of talking to the Glen Ridge people as he, himself, is a Jerseyman. He further stated that a number of friends of the Glen Ridge people had congregated at the auditorium at San Francisco to converse with their friends at the eastern end of the line.

An opportunity was given to a number of church people to talk with Californians, and everyone present thoroughly enjoyed the privilege of hearing friends and relatives communicate with each other across the continent. The conversations were of a personal nature and because of this strongly emphasized the wonder of the intimacy and seeming absence of all distance made possible by Transcontinental Telephony.

Mr. C. H. Benedict, soloist at the church, sang "Hello, 'Frisco" and "Drink To Me Only with Thine Eyes," and in return victrola selections, "Little Gray Home in the West," "Then You'll Remember Me," and "The Star Spangled Banner," were transmitted from San Francisco.

At the conclusion of the program, after Local Commercial Manager Woolsey of Montclair had referred to the telephone development in Glen Ridge as being the highest on record and had invited those present to visit the Montclair building at their convenience, a vote of thanks was extended to the Telephone Company through its representatives, for the enjoyable evening afforded the Men's League and its guests.

Westchester Chamber of Commerce

A DISTINGUISHED gathering of members of the Westchester Chamber of Commerce held their annual dinner at Delmonico's, in New York, December 17. Between 175 and 200 were present from various parts of Westchester County. After the formal speaking, the feature of the evening was a transcontinental telephone demonstration. Mr. F. H. Bethell was one of the speakers, and he said he came to the banquet "not as a telephone official, but as the first and best President that the village of Scarsdale ever had."

Mr. Henry R. Barrett, president of the Chamber and toastmaster of the evening, talked with Mr. Robert Newton Lynch, vice-president and manager of the San Francisco Chamber of Commerce, Hon. Edwin Duffey, state highway commissioner, State Senator George A. Slater, and Deputy Comptroller William Boardman, of New York, talked with ex-Governor J. N. Gillett of California. Mr. Daniel Nolan, owner of the Yonkers *News*, and Mr. M. H. DeYoung, editor of the San Francisco *Chronicle*, indulged in good-natured pleasantries over the wire, much to the enjoyment of the diners. Mr. Allen Walker, New York representative of the United States Chamber of Commerce, talked with Mr. Warren Manley, district secretary of that organization in San Francisco. Mr. Eugene H. Outerbridge, chairman of the Executive Committee of the New York State Chamber of Commerce, Mr. James G. Cannon, president of the Fourth National Bank of New York and member of the Bronx Parkway Commission, and the County Planning Commission, and Colonel F. Q. Brown, talked with Mr. F. B. Anderson, president of the Bank of California. Mrs. Anderson, who was at the demonstration auditorium in San Francisco, also had the opportunity to talk to New York. Mr. S. C. Mead, secretary of the Merchants'

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Transcontinental Telephone Demonstration at Annual Dinner of Westchester County Chamber of Commerce, Delmonico's, New York City, December 17, 1915

Association of New York, talked with Mr. Frederick J. Koster, chairman of the Industrial Bureau of the San Francisco Chamber of Commerce. Mr. Colin Armstrong, chairman of the dinner committee and a prominent representative of the advertising fraternity in New York, spoke with Mr. H. G. Bates of the A. T. & T. Co. in San Francisco.

Mr. E. R. Chamberlain, local commercial manager, N. Y. Telephone Co., at Mount Vernon, sang "Hello, 'Frisco" and "Youth," to which San Francisco responded with "The Little Gray Home in the West," and "Then You'll Remember Me," on the victrola. The demonstration closed with "The Star Spangled Banner," from the Pacific Coast, during which the guests at the dinner stood.

Noted Scientists Talk Across the Continent

THE New York Academy of Sciences held its ninety-ninth annual meeting and dinner at the Hotel Manhattan on Monday evening, December 20, 1915. Before this assemblage of noted scientists a demonstration of transcontinental telephone service was given, following a brief annual business meeting, during which the officers of the Academy were elected for the year 1916.

Dr. Michael Idvorsky Pupin, the inventor of the Pupin coil, was elected president of the New York Academy of Sciences for the ensuing year, and in his lecture Mr. Schmidt referred to the Pupin coil, so-called in honor of the inventor, who was present at the meeting. Mr. Schmidt's reference to Dr. Pupin was as follows:

In the words of President Vail, "It is the cumulative effect of improvements, great and small in telephone, transmitter, line, cable, switchboard and every other piece of apparatus required for the transmission of speech," among which is the Pupin coil, named after your president-elect, Dr. Michael I. Pupin. A Pupin coil is an inductance coil connected in series with the line and its purpose is to lessen the attenuation or loss in transmission in the circuit. They are placed at intervals of eight miles on the Transcontinental Telephone Line and there are approximately 450 of them."

Dr. Geo. F. Kunz, the retiring president, was the first person to converse over the line and he talked with Professor C. E. Grunsky, president of the California Academy of Sciences, and Mr. William H. Crocker, president of the Board of Trustees of the California Academy of Sciences.

Dr. Pupin, physicist, professor of Electro-Physics at Columbia University, and president-elect of the New York Academy of Sciences, next talked with Professor Percival Lewis, physicist, of the University of California. Dr. Pupin also talked with Mr. William H. Crocker.

Other speakers were as follows:

Prof. Nathaniel L. Britton, director of the New York Botanical Gardens and emeritus professor of Botany, Columbia University, talked with Miss Alice Eastwood, botanist of the California Academy of Sciences.

Prof. Charles P. Berkey, geologist, professor of geology, Columbia University, and vice-president of the New York Academy of Sciences, talked with Prof. Bailey Willis, geologist and member of the U. S. Geological Survey.

Prof. Henry Fairfield Osborn, paleontologist, president of the American Museum of Natural History, and ex-president of the New York Academy of Sciences, talked with Dr. Roy E. Dickerson, paleontologist, and with Mrs. William H. Crocker.

Dean F. A. Goetze, of the School of Mines, Columbia University, talked with Professor Grunsky.

Prof. Chas. Baskerville, chemist, professor of chemistry, College of the City of New York, and vice-president of the New York Academy of Sciences, talked with Dr. Frank T. Green, technical chemist, San Francisco.

Mr. and Mrs. H. T. Dickenson talked with Mr. Crocker. (Mr. Dickenson is president of the DeBeers South African Diamond Mines.)

Dr. H. T. Spinden, anthropologist, American Museum of Natural History, talked with Mrs. Zeia Nuttall, anthropologist, of the Pacific Coast.

Mr. Henry Cochran, vice-president of the

Transcontinental Telephone Demonstration at the Dinner and 99th Annual Meeting, New York Academy of Sciences, Hotel Manhattan, New York, December 20, 1915

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Astor Trust Co. and treasurer of the Academy of Sciences, and Miss Bessie Kunz also talked with Mrs. Nuttall.

Prof. Bashford Dean, professor of Zoölogy, Columbia University, and curator of armor, American Museum of Natural History, talked with Dr. Barton Warren Evermann, zoölogist and member of the U. S. Fish Commission.

Mrs. Charles P. Berkey, wife of Professor Berkey, Columbia University, also talked with Dr. Evermann.

Mr. A. A. Anderson, artist, talked with Colonel Everett, vice-president of the California Academy of Sciences.

Dr. H. E. Crampton, curator, department of invertebrate zoölogy, American Museum of Natural History, talked with Dr. Barton Warren Evermann.

Dr. Kunz and Dr. Pupin, president and president-elect, respectively, expressed their appreciation of the demonstration which had been arranged through the courtesy of the American Telephone and Telegraph Company and the New York Telephone Company. Dr. Pupin's tribute to the American Telephone and Telegraph Company was as follows:

Members of the Academy and guests:

It is a great privilege, and we all appreciate the courtesy extended by the American Telephone and Telegraph Company. It isn't only a demonstration of transcontinental telephony, it is a demonstration of transcontinental telephony plus, because each one of the receivers which has been installed in this room makes it harder and more difficult to talk over, and I know, personally, that the transmission over the Transcontinental Line is perfect when only two telephones are used. We are very much indebted to the American Telephone and Telegraph Company for this great privilege and in the name of the Academy, as president-elect, I want to thank them and their representatives here to-night.

Transcontinental Telephone Demonstration at the Dinner and Meeting of the Quill Club, Hotel Manhattan, New York, December 21, 1915

Quill Club

A TRANSCONTINENTAL Telephone Line demonstration was the feature of the regular meeting of the Quill Club of New York, held at the Hotel Manhattan, Madison avenue and Forty-second street, New York City, Tuesday evening, December 21.

The Quill Club of New York is the outgrowth of the "Religious Press Club," which was organized April 11, 1888, and received its present name in 1890. Its object is to promote interchange of views on religion, morals, philosophy, sociology, science, and other topics of mutual interest to its members.

The principal speaker of the evening was Mr. Clarence Griffin Child, L.H.D., professor of English, University of Pennsylvania, who spoke on the subject, "The Magpie of Letters." Rev. Charles L. Goodell, D.D., the president of the club, presided.

The following gentlemen carried on the transcontinental telephone conversations:

Rev. Chas. L. Goodell, D.D., president of the New York Quill Club, talked with Hon. Robt. Watchorn, vice-president of the Standard Oil Company of California and ex-Commissioner of Immigration, Ellis Island, who was at Los Angeles.

Dr. Chas. P. Fagnani, professor of Hebrew, Union Theological Seminary, and secretary of the Quill Club of New York, talked with Dr. John Willis Baer, president of Occidental College at Los Angeles. Dr. Goodell, Dr. Thos. J. Harris and Mr. Gilbert Colgate also talked with Messrs. Watchorn and Baer.

Dr. David Starr Jordan, president of Leland Stanford University, talking from his home in Palo Alto, was next introduced, and spoke with Dr. Goodell, before delivering a short address on "Peace."

Others who talked to San Francisco were as follows:

Mr. Henry K. Jessup of the New York Bar to Mr. F. P. Anderson, president National Bank of California.

Mr. C. R. Bangs of the American Telephone and Telegraph Company to Mr. G. E. McFarland, president, and Mr. Henry T. Scott, chairman of the Board of Directors, Pacific Telephone and Telegraph Company.

Mr. Gilbert Colgate, president Colgate and Company, to Mr. W. B. Palmore.

Dr. Thos. J. Harris, assistant secretary, Quill Club of New York, to San Francisco's telephone representative, Mr. H. E. Bates.

Mr. Wm. Rush Taggart, general counsel, Western Union Telegraph Company, to Mr. C. H. Gaunt, general manager, Pacific Department, Western Union Telegraph Company.

Mr. Austin B. Fletcher, of the New York Bar, and ex-president of the Union League Club, to Mr. Chas. P. Fels, president Pacific Union Club.

Col. Alex. Bacon to Colonel Hunter, commanding officer Fort Scott, at Presidio.

Paterson Rotary Club

DO you remember Elbert Hubbard's story, "A Message to Garcia"—that preachment founded upon an incident which occurred at the outbreak of the war between Spain and the United States when it was of the utmost importance that President McKinley should get into quick communication with General Garcia, the leader of the Cuban Insurgents? "Garcia was somewhere in the mountain fastnesses of Cuba—no one knew where. No mail nor telegraph message could reach him. The President must secure his coöperation, and quickly. What to do! Someone said to the President, 'There is a fellow by the name of Rowan will find Garcia for you, if anybody can.'"

Rowan was sent for and given a letter to be delivered to Garcia. He sealed the missive in an oilskin pouch, "strapped it over his heart, in four days landed by night off the coast of Cuba from an open boat, disappeared into the jungle, and in three weeks came out on the other side of the island, having traversed a hostile country on foot and delivered his letter to Garcia."

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"The point I wish to make," wrote Hubbard, "is this: McKinley gave Rowan a letter to be delivered to Garcia, Rowan took the letter and did not ask, 'Where is he at?'"

"By the Eternal! there is a man whose form should be cast in deathless bronze and the statue placed in every college in the land. It is not book-learning young men need, nor instruction about this and that, but a stiffening of the vertebræ which will cause them TO BE LOYAL TO A TRUST, TO ACT PROMPTLY, CONCENTRATE THEIR ENERGIES: DO THE THING—'CARRY A MESSAGE TO GARCIA.'"

TOWARD noon on Friday, December 3, 1915, storm clouds heavy with snow began to gather in the Sierra Nevada Mountains. Telephone men stationed along the route of the Transcontinental Line between Reno, Nev., and Sacramento, Cal., watched the clouds form necklaces around the mountain peaks and looked at each other significantly.

"Guess we're in for the first real storm of the season," remarked one watcher. "I wonder where it will hit us hardest."

The sky darkened rapidly. By afternoon Old Man Winter began to tear things up. "He's running amuck," vouchsafed a telephone man. Wet, heavy snow, accompanied by sleet and a high wind, swept down upon the Transcontinental Line. It came straight down the sides of the mountains and in sharp, impetuous drives from gullies and ravines. So fierce was the attack that by 8.15 o'clock that night both Transcontinental telephone circuits between Reno and Sacramento were in trouble.

All that night the Storm King raved and strove to twist and tear the Transcontinental wires from their supports. By daybreak he ceased his onslaught. The telephone men began to inventory the damage. They found that seventy-six miles of pole line had been torn down; poles and crossarms had been shattered and splintered into kindling wood; ice six inches in diameter incased the wires still up; direct telephone communication between New York and San Francisco was a dream of yesterday.

All this damage had occurred somewhere between Reno and Sacramento. Just where had to be determined quickly, for the work of repair had to be started as soon as possible.

Those men guarding the line out there in the West knew nothing of a demonstration of the Transcontinental Line which was scheduled for that night in Paterson, N. J. They knew only that service between New York and San Francisco had been interrupted and that it must be restored promptly.

Here in the East plans had been completed by the New York Telephone Company for holding coast-to-coast conversations between members and guests of the Rotary Clubs in Paterson and San Francisco. In the New Jersey city a gathering of nearly 700 persons was assured.

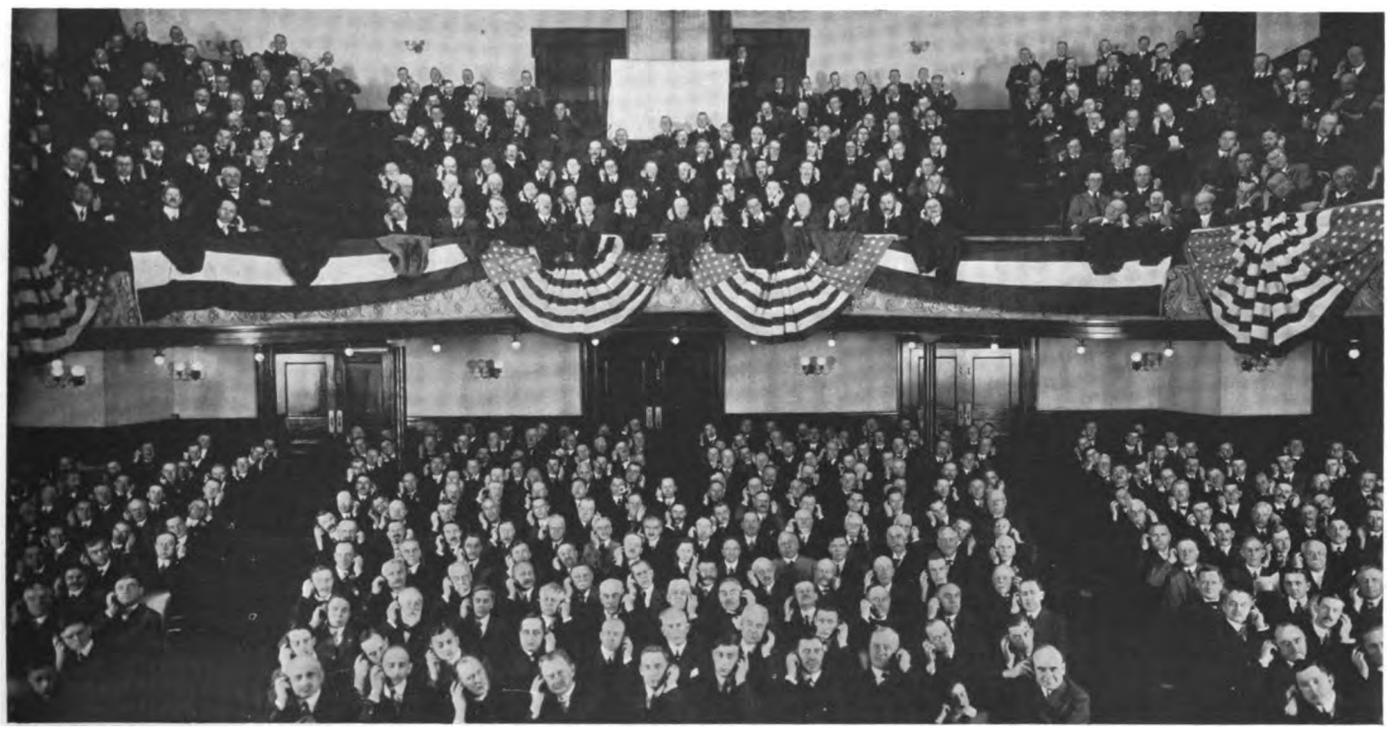
Out West 2½ feet of new snow covered the 2 feet of old snow that blanketed the rough, scarred surface of that mountainous country where the telephone men were working to restore the Transcontinental Line. The snow was so soft that it would not bear the weight of the linemen even on snowshoes, and except where it had been piled into drifts 8 and 12 feet deep, the snow would not carry the men over large boulders and brush. It was a case of wading waist-deep through wet, slushy snow that sent its chill through even the warmest clothing.

But that line had to be repaired. Working under the personal direction of J. F. Lowrie, district superintendent of plant of the Pacific Telephone and Telegraph Company, stationed at Sacramento, Toll Wire Chief Wall at Sacramento, Wire Chief Peters at Reno, and Lineman Young, working west of Truckee, Nev., a reinforced gang of linemen was sent out under General Foreman W. A. MacCormack to locate and repair the trouble on the line.

The battleground was found to be between Emigrant Gap and Truckee.

The territory was divided into sections. Each lineman was given six miles of line to cover and started out with food enough for a day. Lineman Bowen worked along the line east of Summit; Linemen Heath and McEver covered sections west of Summit; Linemen Neilson and Anderson had the territory east of Cisco; Lineman Holcomb was assigned to a six-mile strip east from Crystal Lake; Lineman Level took the line west of Crystal Lake and Lineman Bertram worked east from Emigrant Gap.

Failures on the line were found at intervals of half a mile, and involved broken wires, smashed crossarms, and broken or splintered poles. The heavy



Transcontinental Telephone Demonstration at Meeting of the Rotary Club, Paterson, N. J., December 3, 1915

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going under foot made progress exceedingly difficult. A high wind was blowing, and it was zero weather, but the men plugged ahead steadily.

By nine o'clock in the morning the preliminary work indicated that the trouble could be cleared by nightfall and a report to that effect was made. Stopping for rest and lunch the linemen found that their food had frozen and had to be thrown away. Hungry and weary, they struggled on along their sections of the Transcontinental Line, striving to bring order and service out of chaos as rapidly as they could.

At two o'clock that afternoon the log of the Paterson-San Francisco special demonstration shows this entry:

Reno advises that the trouble is in a 76-mile section located 56 miles east of Sacramento and that they have twelve men after the trouble; the snow is from 8 to 12 feet deep and is wet and soft, ice on wires 6 inches in diameter.

It looked doubtful then whether the Transcontinental circuits could be restored in time for the demonstration, and the resourceful telephone men immediately began to arrange a substitute route for the cross-country demonstration. They built up a special circuit from Denver to San Francisco via Trinidad, Albuquerque, Phoenix, Yuma, and Los Angeles. This circuit was tested by Mr. J. C. Powers, chief test-board man of the American Telephone and Telegraph Company, and Mr. R. P. Horton, Transcontinental circuit supervisor, but conditions were such that the desired quality of transmission could not be secured and the circuit was abandoned. Meanwhile the linemen out there in the Sierras were working with might and main to repair the damage caused by the rampage of Old Man Winter.

At 3.15 o'clock, Eastern time, Mr. H. W. Casler, division advertising manager of the New York Telephone Company, who with the local Commercial, Plant and Traffic forces of this Company and the representatives of the American Telephone & Telegraph Company had arranged the Paterson demonstration, was informed by Mr. J. G. Truesdell, in charge of the transmission demonstrations for the American Telephone & Telegraph Company, of the conditions in the storm-swept territory.

Failure of the Paterson demonstration appeared inevitable. Could even the splendid spirit of coöperation and team work all through the Bell System bring success out of almost sure defeat?

Mr. Casler thought so and planned accordingly.

His first move was to telephone to Mr. C. H. Fuller, division commercial superintendent of the American Telephone & Telegraph Company, who was at his residence in Hackensack, N. J., and inform him of the situation. Then he asked Mr. Fuller to help him get Denver and Salt Lake City telephone men to secure prominent speakers to take part in an emergency program, if such was necessary. Mr. Fuller was quick to respond.

A three-cornered telephone conversation was held between Mr. Fuller in Hackensack, Mr. Casler in Paterson, and Mr. W. F. Cozad, superintendent of traffic of the Mountain States Telephone & Telegraph Company in Denver. This talk was arranged by Mr. R. P. Horton, circuit supervisor of Test Board No. 9 at 24 Walker street, New York City.

The situation was quickly explained to Mr. Cozad. The plan was this: Should the linemen on the Sierra battlefield fail to restore the breaks on the Transcontinental circuits in time for the Paterson demonstration, a substitute demonstration was to be given. Instead of talking with San Francisco Rotarians, the New Jersey guests of the New York Telephone Company were to converse with Rotarians and other prominent men in Salt Lake City and Denver. Mr. Cozad agreed to secure the Mayors of the two Western cities, prominent clergymen, the chiefs of police, superintendents of schools, and any other civic leaders who were available. A request for music from Denver also was made.

"I'll have them there," said Mr. Cozad. "Notify me by seven o'clock, Eastern time, that's all I ask."

Meanwhile bulletins were coming in at regular intervals, reporting on the progress in clearing the trouble in the storm territory. These messages were being sent from Sacramento via San Francisco and Portland, Ore., over the Morse circuits and also from Reno via the regular transcontinental route.

At five o'clock Reno advised that a pair of wires was expected to be in working order within an hour.

At seven o'clock Mr. Casler notified Mr. Cozad that it had been decided to put through the emergency program, inasmuch as it was still doubtful if the Transcontinental wires could be restored in time.

Plant forces and everyone connected with the demonstration at once began to work out the plans for the substitute program. Mr. P. A. Walsh, test-board man at Denver, Mr. W. K. Peters, test-board man at Reno, and Mr. J. A. Ansley, test-board man at Salt Lake City, got into touch with Mr. Cozad, who outlined the situation to them.

While they were working out the arrangements, word came from Reno at 7.45 o'clock that MacCormack's men had succeeded in closing up one pair of wires in the storm section, but that the circuit was so noisy that it could not be successfully used on short notice. The linemen had won their fight after an all-day struggle. *They had carried the message to Garcia.*

In Denver Mr. Cozad was gathering a group of representative citizens in the Mountain States Telephone & Telegraph Company's building. In Salt Lake City, Mr. Ansley was securing speakers. A lot of the men who were called upon would make fine telephone men. They were quick to take in the situation and quick to respond. In Salt Lake City, Mr. Ansley called upon the president of the Rotary Club, Mr. F. C. Schramm, and Mr. Schramm "did the thing" right. The word came to him at the last minute. To reach the telephone building meant fast work. Out to his garage he hurried, throwing on his overcoat as he went. With one warning "honk, honk," the chief executive of the Salt Lake City Rotary Club swung into the street and sped toward the telephone building on high gear.

Nearing a street corner he saw the warning arm of a traffic patrolman swing up like a semaphore and the sign was one of danger. "Speeding, fifty dollars," thought Mr. Schramm, but he kept on, bringing his machine to a stop with a jerk on a dead line with the policeman's feet. "Pinched!" "Let me explain, Mr. Officer. Here's the situation," and then Mr. Schramm as quickly as he could told the policeman just how matters stood.

That officer was a good sport. "Go ahead, but I'll go with you," he said, and Mr. Schramm pulled the policeman into his car and hit high speed once more. He reached the telephone building in time to send his greetings to fellow-Rotarians in Paterson and Denver. When Mr. Schramm told the Paterson audience of his arrest and announced that a certain limb of the law was waiting outside the building, guarding his machine until he came out to be taken to police headquarters, the laughter swung across the continent in a real gale.

Not a word of the situation in the Sierras had been told to the audience that gathered in the Paterson Y. M. C. A. building. The program started as planned originally, with Mr. Edward Sceery, president of the Rotary Club, presiding. Mr. W. P. Gettinger, of New York City, international vice-president of the Rotary Club, spoke briefly on "Rotarianism," after paying a fine tribute to the work of the Telephone Company. Then came a talk by W. B. Gourley of Paterson, the principal speaker of the evening, on "The Influence of the Telephone on Business." Mr. Gourley traced the history of the telephone in Paterson and paid a high tribute to Mr. Theodore N. Vail and the policies of the Bell System.

Following Mr. Gourley's talk, the motion picture lecture on "The Achievement of Transcontinental Telephony" was delivered by Mr. W. F. Schmidt.

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Then came the explanation of the change in the evening's program, and the Paterson audience was linked by telephone with Denver and Salt Lake City, instead of with San Francisco. Mr. W. K. Peters, at Reno, who did such wonderful work in directing the restoration of the Transcontinental Line, described the all-day fight to remedy the damage done by the preceding day's storm, and his graphic words pictured Bell Service and its meaning in a new way to the audience.

With Mr. E. J. Higgins, local commercial manager, Paterson, acting as master of ceremonies, the following persons talked over the lines from Salt Lake City and Denver:

Mr. Edward Sceery, president, Paterson Rotary Club, and Mr. F. C. Schramm, president, Salt Lake City Rotary Club.

Hon. Wm. P. Gettinger, vice-president International Rotary Association, and Mr. F. C. Schramm, Salt Lake City.

Mr. F. D. Waterman, vice-president, New York Rotary Club, and Mr. Samuel Neil, vice-president, Salt Lake City Rotary Club.

Mayor Robert H. Fordyce and Mr. F. C. Schramm, Salt Lake City.

Mr. J. R. Wilson, superintendent of schools, Paterson, and Mr. Evans, president-elect Denver Rotary Club.

Mr. George Burke, Civil Service Commissioner, and Mr. H. C. Parmlee, editor *Metallurgy* magazine.

Mr. Wm. D. Plumb, founder, Paterson Rotary Club, and Mr. W. J. Spray, president, Denver Rotary Club.

Judge Abraham Klenert and Mr. H. L. Barrett, principal, Denver High School, Denver.

Mr. J. R. Wilson and Mr. H. L. Barrett, Denver.

Mr. Sceery and Mr. Evans, president-elect, Denver Rotary Club.

Dr. D. S. Hamilton, rector of St. Paul's Episcopal Church, and Dr. Allen Tanner, pastor of First Congregational Church, Denver.

Chief of Police Bimson, Paterson, and Deputy Chief of Police Lydon, Denver.

The most spectacular feature of the evening was the 10,000-mile transmission of the words of Mr. W. B. Bryant, president of the Paterson Chamber of Commerce, when he spoke to the audience before him, over a telephone circuit to Denver, 5,000 miles away, and back to the receivers in the room where he stood.

Victrola selections, "Little Gray Home in the West," and "The Stars and Stripes," were transmitted from Denver and enjoyed immensely by the audience, who, with the people of Denver and Salt Lake City, listened also to the roar of the Atlantic Ocean at Rockaway Beach.

San Francisco was not reached, but the audience realized that it is impossible to control the elements. Everyone seemed to appreciate the herculean job attempted by the Company to restore the Transcontinental Line, and all appeared to feel that a most wonderful entertainment had been provided.

At the conclusion of the evening's program, Mr. George C. Arnold, a prominent capitalist, made a motion which was seconded by Mr. W. D. Plumb and unanimously carried, extending a vote of thanks to the company for the program which had been provided.

The Paterson *Press-Guardian*, in an editorial two days after the demonstration, said:

Patersonians owe a debt of gratitude to the New York Telephone Company, working in conjunction with the local Rotary Club, for the wonderful demonstration which was given in the Y. M. C. A. auditorium Saturday night when an audience of over 600 men was enabled to listen to telephone conversations between officers of the club and others in Paterson and prominent residents of Denver, Colo., and Salt Lake City, Utah. Nothing could have more forcibly demonstrated the marvelous development of the telephone than this exhibition, and while a sleet storm in the Sierra Nevada Mountains carried down some of the wires and made it impossible to talk clear through to San Francisco as originally planned, the audience could well appreciate the fact that the feat would have been easy, and as satisfactory as it was to converse with Salt Lake City, the nearest point to the coast reached during the evening. Patersonians have been afforded many unique entertainments of various kinds in days gone by, but it is doubtful if any of our people ever witnessed a demonstration so impressive and so instructive as the one provided on Saturday night through the agency of the local telephone management.

EFFICIENCY AMERICAN BRAND.

Financial America

You remember Elbert Hubbard's famous preachment, "A Message to Garcia," the story of the man named Rowan? There are many "Rowans" in the Bell System; they know how "to act promptly; concentrate their energies; do the thing—'carry a message to Garcia.'" They are loyal to their trust, and because they are, Bell telephone service is successfully maintained at high standards under all sorts of conditions for the daily use of millions of people. All honor to the telephone "Rowans"!

Speedy at That

Boss (*to new boy*)—You're the slowest youngster we've ever had. Aren't you quick at anything?

Boy—Yes, sir; nobody can get tired as quick as I can.—*Boston Transcript.*

The Knowledge of Husbandry

"I WOULD like twenty-five good cigars for my husband."

"Yes, madam; how would you like them—strong or—?"

"Oh, strong! Very strong! The last he had all broke in his waistcoat pocket."
—*Ex.*

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Saving Twenty-five Hours a Day for New York City's Telephone Users

New Telephone Directory for Metropolis Cuts More Than a Second from Time of Each of Two Million Daily References to It; How Biggest Book of Its Kind Was Made Still Bigger and More Legible Though Less Bulky.

THE current issue of the New York City Telephone Directory saves twenty-five hours a day for the telephone users in the metropolis. A number can be found in this book in 1.08 seconds less than was possible in the preceding directory, and this saving on each of the 2,000,000 daily consultations the book receives adds twenty-five hours every day to New York City's valuable time.

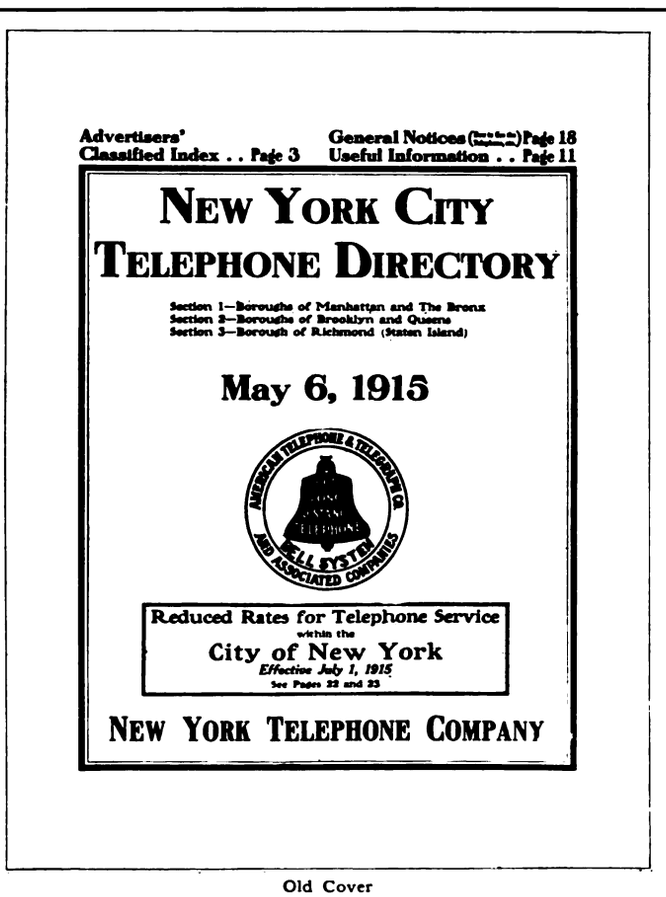
That is only part of the result of the New York Telephone Company's solution of the problem of how to keep New York City's telephone directory from becoming too bulky without sacrificing the legibility of its pages. The telephone Company not only has increased the legibility of the biggest book of its kind in the world, by more than 10 per cent., but at the same time it has increased the amount of information the directory contains and yet reduced its weight by more than half a pound. There are 20 per cent. less pages to turn to find a name; 30 per cent. less distance for the eye to travel in following a listing from the beginning of the name to the telephone number, and 20 per cent. less pages to electrotype and print, which means quicker delivery of completed editions after the forms close.

A comparison of some of the statistics of the October, 1914, and October, 1915, issues of the New York City Telephone Directory will show the result of some of the improvements incorporated in the new directory. The October, 1914, book contained 952 pages. It had 325,000 listings arranged in three-column measure and it weighed three pounds and eight ounces. The October, 1915, book contains 836 pages, has 360,000 listings and weighs slightly less than three pounds, and as already stated, it is much easier to read.

The pages of the present directory are arranged in four columns and printed with a new type face, which is compressed slightly horizontally rather than vertically. The space between lines is increased. The book is bound by a new process which permits it to lie perfectly flat no matter where opened, and the "job" is topped off by a new and more artistic cover design drawn by Mr. T. M. Cleland.

All these improvements are the results of nearly two years of study and experimentation by a committee of telephone men, which consisted of the General Commercial Superintendent of the Company as chairman, the General Commercial Engineer, the Metropolitan Manager, the Advertising Manager, the Traffic Manager, a Special Agent of the Chief Engineer's office and the Directory Manager. From time to time as conditions required, this committee called for the services of division commercial managers, commercial engineers and assistants from various departments.

When the directory committee began work, it recognized that the problem it faced was pressing. Between 30,000



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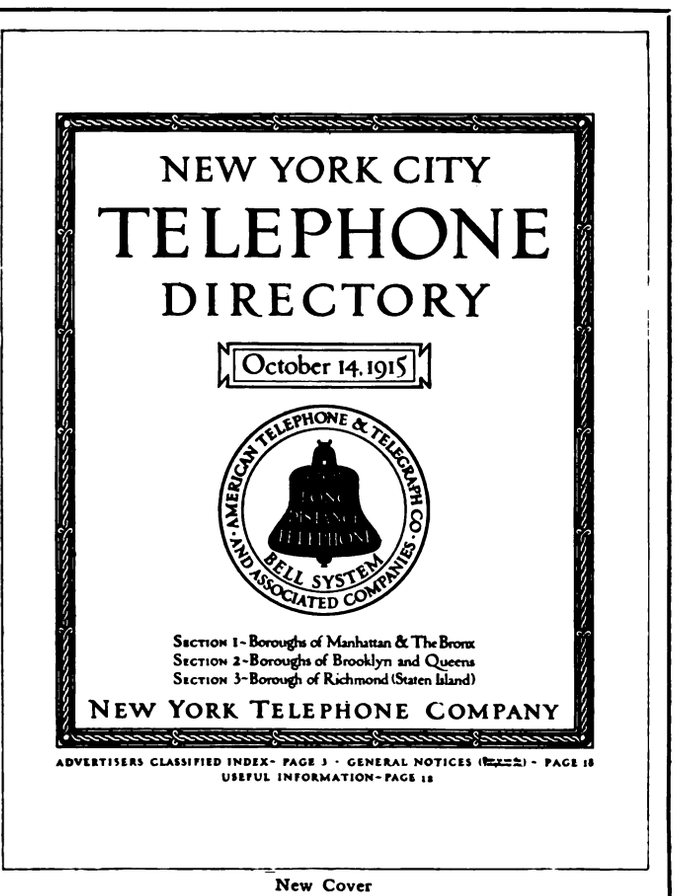

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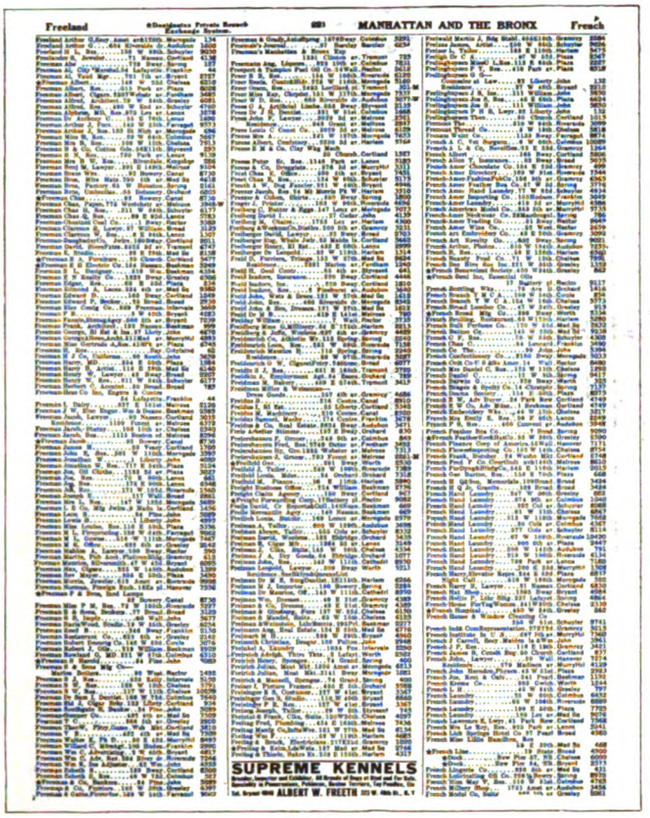

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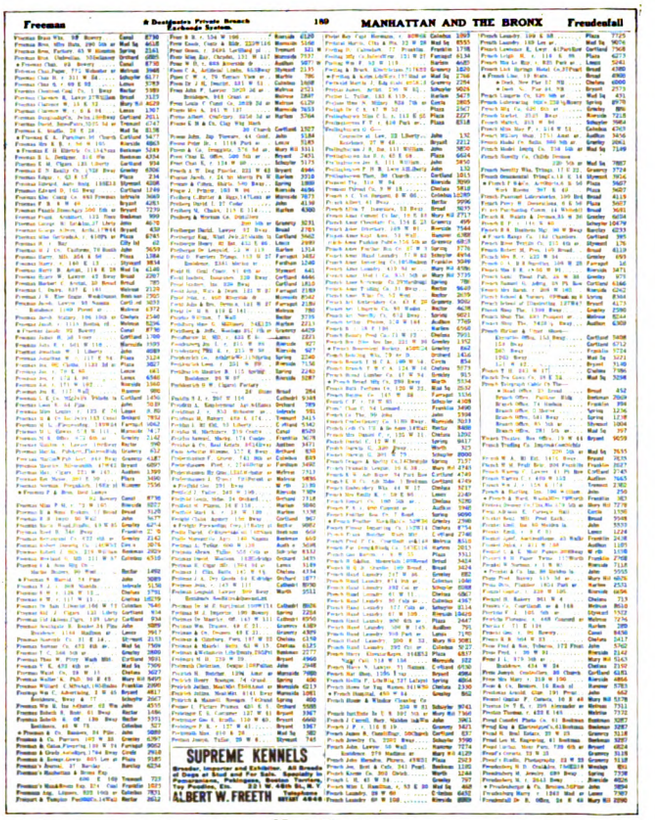

New Page

and 40,000 listings are added annually to the New York City directory and by the time its May, 1915, issue appeared, the book would not only be large for subscribers to handle but also too bulky to be bound by wire stitching as formerly.

Sub-dividing the directory into two or more volumes was advisable only as a last resort. It was out of the question to reduce the territorial scope of the book. The space gained by omitting the advertising pages, and lists of pay stations, would be counterbalanced by the average increase in stations in two-thirds of a year.

To reduce the bulk of the book, therefore, became a question either of using thinner paper or of revising the typographical arrangements so as to accommodate more listings on each page. The use of a thinner paper would be a temporary expedient, for even with the thinnest paper practicable the book would be of the same bulk as the May, 1915, issue at the end of a three-year period.

Study of the question of typographical arrangement showed that while it was inadvisable to reduce the size of the type used, it nevertheless was feasible to decrease the width of the column to make a gain in space. This opened up the question of a four-column arrangement of the listings.

The committee had a sample page set up in a six point type compressed enough horizontally to permit the same number of listings in each of four columns as there were in each of the columns on the three-column page. To compare the legibility of this four-column page with that of the three-column make-up, the committee arranged a series of experimental tests, using twenty-four "Information" operators for the subjects. Each operator was given eleven tests. Listings were selected on each of the sample pages and the operators were asked to find these numbers and to do so under conditions as nearly as possible the duplicate of regular service conditions. Experienced observers using stop-watches timed the operators while they made the readings.

Taking the average from the aggregate of 264 tests, the committee found that while a number could be found on the three-column page in 10 seconds, it required 11 seconds to find a number on the four-column page. This was an encouraging result, for with the opportunity to try out various arrangements of type, there was good reason to believe that not only could the loss of 1 second be prevented, but the average time of finding a number could possibly be brought down under the 10-second mark.

The suggestion was made that enough added legibility could be gained to prevent the loss of a second in the average time of reading by slightly leading the space between lines. Tests were made and the committee found that not only could the one second be regained by this process, but, what was even better, the average time required to find a number might be shortened. These experiments showed conclusively that space between lines is of greater value in securing legibility than space between letters and that horizontal compression of letters is more advantageous than is vertical compression.

Tests along broader lines were desired, because the "Information" operators used in the experiments, like all telephone operators, are selected by the Company for employment because of their good eyesight, and the telephone directory is consulted by all classes, some trained and some untrained, and all with varying quality of vision.

Dr. J. W. Baird, Director of the Psychological Laboratory at Clark University, Worcester, Mass., was called in to supplement this part of the directory study by making tests with sample pages arranged in several different ways. Dr. Baird is an expert on the psychology of optics and printing. He made nearly 4,000 experiments, using 32 men and women as subjects. These individuals represented radically different occupations, different experience in the use of the telephone directory and different conditions of eyesight. Varying amounts of natural and artificial illumination were included in the tests so as to approximate the actual conditions under which the directory is ordinarily consulted.

No arrangement of pages profited more than another by the practice acquired by

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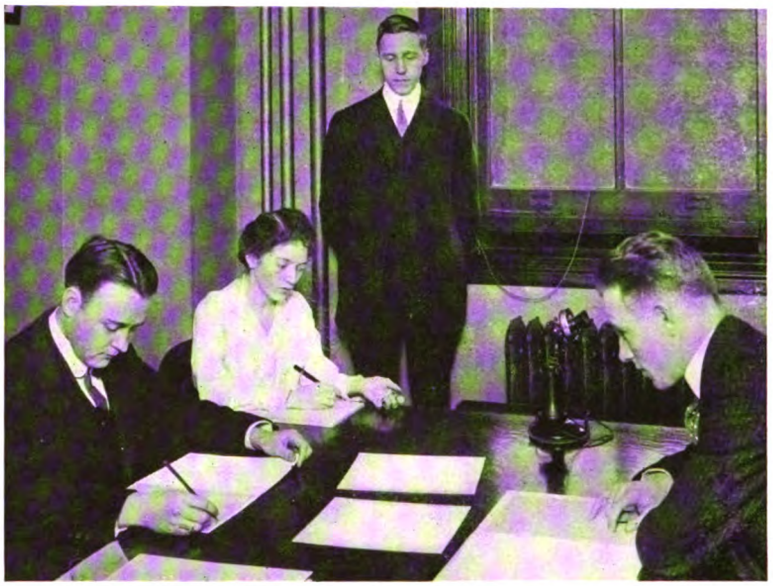
any subject during the course of the experiments. Pages with names beginning with the letters I and M and S were selected because they varied in difficulty. The three pages were set up in each of four different arrangements and mounted on cardboard. The type was of the same height and general style as that used in the October, 1914, directory. Each page was placed in a separate booklet. Each subject was given the name of a subscriber, repeated it aloud to make sure he had understood it correctly and then opened the booklet and looked up the number. He was timed from the moment he opened the booklet until he found and pronounced the number.



TESTING THE LEGIBILITY OF SAMPLE DIRECTORY PAGES

The man seated at right of picture is calling names of subscribers, and the man seated opposite is looking up telephone numbers, while the girl is keeping time with a stop-watch

To find a number on a page from the old directory set in three-column measure required an average time of 10.36 seconds. To find a number on the four-column page which was finally selected required 9.28 seconds. This page was set in four-column measure and leaded very slightly between the lines of type so that there were 11 lines of type to the inch instead of 12 as in the three-column arrangement of the old directory.

The gain in legibility is probably greater than the 1.08 seconds per average reading or slightly more than 10 per cent. Disregarding the group of subjects who were least expert in finding a number and considering only the most expert and the group of readers who were neither expert nor non-expert, the average gain in legibility amounts to more than 18 per cent. These two groups were able to read the listings of the three-column page of the old directory in the average time of 9.16 seconds. They read the new four-column page in 7.47 seconds. The middle group alone could find numbers on the old page in 10.24 seconds. It took them 8.28 seconds to find numbers on the new page. This is an improvement of slightly more than 18 per cent.

The studies made by the committee covered not only the New York City directory but also the local and division telephone books which the Company issues throughout its territory and in every case where conditions warranted, the results of the experimental work on the New York City directory were applied to other books. The telephone company each year publishes about 4,600,000 telephone directories, and the benefit of the improvements made in the form of supplying telephone information is spread out over a wide territory.

Associate telephone companies are making good use of the studies made by the New York Telephone Company and the general comment from telephone subscribers shows that the Company's endeavor to supply them with telephone information in a more readable and more convenient form is not unappreciated.

The Triumph of Silence

IN these days, when "The Voice With the Smile Wins" is coming to be a national maxim, it is interesting to learn of an early lawsuit in Cincinnati, O., in which the local telephone company successfully defended its action in discontinuing service to a subscriber because of his use of profanity. It is perhaps the earliest case on record in which a telephone company established its right of censorship over the uses to which its wires are put.

This historic case has been brought to light by Mr. Frank H. Taylor, president of the White Dental Manufacturing Company of Philadelphia. Mr. Taylor is an old time friend both of the Cincinnati litigants and of several of our own officials in Dey street, to whom he recently sent the briefs in the case that had somehow escaped destruction during the thirty-five years that have passed since they were prepared.

The offender in this particular case was an irate Cincinnati printer. The wrath of a printer is so often justified (?) that the officials of the Cincinnati and Suburban Telephone Company were inclined to be most tolerant of his frequent eruptions. Besides, the telephone people were having troubles of their own with the new device, then but five years old. They had a secret fellow-feeling for the printer, who thus frankly and audibly vented his wrath. Meanwhile complaints continued to reach their ears, demanding a sharp revision downward of the printer's vocabulary.

Singularly enough, the final offense that brought the typesetter's downfall came on April Fool's Day, 1882. He was having difficulty in securing a desired connection. After storming and fuming at the operator, he demanded the ear of the company's manager. Among other things he called the greatest invention of modern science a "damned old telephone." Later in the day he was reminded of a declaration subscribed to in his contract that he would "not permit the use of the telephone for any profane, indecent, or rude language." He was then advised that his line would be "plugged out" until he could give satisfactory assurance of reform.

When the printer appeared before the Superior Court of Cincinnati to seek a restraining injunction against the telephone company, he was represented by Mr. Robert W. Carroll, of Cincinnati, one of the most prominent attorneys in Ohio. Armed with ponderous dictionaries and encyclopedias, and huge volumes of Shakespeare, Dryden, Pope, Byron, and Dickens, counsel engaged in a fruitless effort to prove that the short ugly word had been generously employed by printers ever since the first clank of the printing press, and that it was sanctioned by the literary lights of all times. The printer and his distinguished counsel put up a stubborn fight, but right was not on their side.

The records do not indicate how soon thereafter the printer's telephone service was restored, but it is probable that his vocabulary was considerably expurgated and that his diction thereafter ceased to offend. The court's refusal to grant the injunction undoubtedly had a salutary effect on Cincinnati's telephone manners and legalized the position of telephone companies throughout the country in insisting that the ears of their patrons be protected from outrage.

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The Rescue of the Lost Friends

MISS LILLIAN BRYSON, supervisor in the Union central office, Jersey City, responds to the suggestion to the Union girls, made in Lamps and Keys in October, with an amusing account of a piece of work accomplished in spite of almost hopeless odds. There was a very interesting editorial from the *Hudson News* quoted in the October TELEPHONE REVIEW, highly commending the telephone service enjoyed by the *News*, through the Union office. Apropos of this clipping, Lamps and Keys suggested that there must be, behind that comment, some stories of fine work done in the Union exchange.

If Miss Bryson's story is any indication (and we think it is) of the thoroughness and unfailing resource of the service the *News* receives, we do not wonder at the enthusiastic appreciation expressed by the paper. Although this story is of the extraordinary, rather than the routine, day-to-day service which the editorial referred to, but of which there is little to tell to those who know the routine so well, nevertheless Miss Bryson's article exemplifies the spirit of "stick-to-itiveness" and readiness which actuates both routine and emergency work. Miss Bryson tells it with a lively sense of humor, which brings out all the highlights.

But two paragraphs is long enough to wait for a good story! Miss Bryson tells the tale of the Lost Friends thus:

A party of eleven friends recently journeyed from Arlington to West New York to visit a relative living in this vicinity. They understood the address as 475 Palisade avenue, but found upon their arrival in West New York that this address was but a myth. After a fruitless search of three hours the visiting party were at their wits' end to know what to do next. A more advanced member of the committee of "Ways and Means" suggested the telephone.

First they called the apartment in New York from which the party in question had recently moved. A conversation with the superintendent of the apartment brought no results, as he did not know where the elusive relative had moved to. He suggested the telephone number of an intimate friend. This number was called, but proved to be a don't answer. Here, the leader of the dejected party was about to give up her efforts when she called me and asked if I could help her. I verified the don't answer report she had received on the New York number and also the name of the subscriber. It proved to be a butcher shop, and again her hopes of locating the prospective hostess were shattered.

It then occurred to the worthy spokesman that possibly the hostess-to-be, after such a prolonged delay in the fulfillment of the eleven's social appointment, had called their home in Arlington to ascertain what had caused the delay. I told her if this was the case we would have a record of such a call, and I immediately investigated the matter and found a record of a don't answer from one of our public telephones. I called the proprietor at once and asked him if he could tell me where the patron who made this call resided. He replied that she lived in the same apartment as he did and at my suggestion called her to the telephone.

When the long sought hostess came to the telephone I questioned her regarding an anticipated visit from friends in Arlington and to my query she replied in a most anxious tone of voice, "Why! Can you tell me where they are?" I told her that by means of the call she had made to Arlington I had located her and that her friends had been three hours trying to find her. Then I connected her with the chairman of the "Lost Friends" and the rejoicing of both seeker and sought excelled the proverbial "Return of the Prodigal Son."

The worthy chairman then called me and thanked me on behalf of herself and friends, and once more the most wonderful little instrument of modern science had scored a victory.

L. BRYSON,
Supervisor, Union Central Office.

Investing Our Time

FATHER TIME and his son, young 1916, face us this New Year season with a certain expectancy. Their attitude implies an undeniable interest on their part in what they do mean to us anyway. Their questioning claims an answer, and for the satisfaction not alone of Father Time and 1916, we look squarely at the proposition of how we spend our days and minutes. How do we invest the capital which is placed to our credit in the Bank of Time at the beginning of the year?

NEW Year's resolutions are rampant. We gather up all the threads of our activities and start again to braid them into a firm strand that we can take hold of and think, "What a strong, useful thing this is I am weaving of my life! It is not nearly so frayed as was last year's; there are not so many loose ends. The main threads are stouter and the small threads are woven in more firmly, so it is a bigger braid, and stronger."

It is the wisdom of the time-investment in the *small* threads of our activities that needs the most attention. Of the central cords, for the most part, we have already decided, especially of our work, which we weave into the strand not only to earn our living, but to do our share of the world's work. But the small threads are as essential in their way as the central cords in making a full and unfrayed strand, useful to ourselves and others to take hold of for support and confidence.

BECAUSE the main activities absorb so much time and attention, many of us pay little heed to the auxiliary threads of our lives. In other words we neglect our spare minutes. We waste a powerful source which could be made contributory to the main purpose of our lives. The fact that we have a big, important work to do does not mean that that is all we have to do in the world. If we are investing some of our earnings in A. T. & T. Co. stock, we do not conclude from that that we may spend every spare cent on candy and gimcracks and still be making the most of our income. No more can we invest part of our time wisely and fritter away the spare moments, and still be making our time-income serve us completely.

Of course, our spare minutes are not *spare* minutes at all. There is probably not one of us who does not have to choose between a dozen different things to be done in nearly every space of five minutes or more which comes her way outside of working hours. The question is, which one of the dozen is the best investment. Shall the odds and ends of time be wasted, or used?

"THERE are so many little odds and ends of time that are too short to use. It isn't worth while to start anything—you have to stop before you fairly begin."

"It isn't good to keep on the go every second. You have to take time to relax once in a while."

Two of the opponents of the wisdom of small investments are enough to answer, to see our point clearly.

AT the Walker-Lispenard Building not long ago the A. T. & T. Co. girls had an exhibition of needlework. Most of it had been done in the sitting-room, during the relief periods and lunch hours of the girls. It was an eloquent witness to the astonishing results odd bits of time can be made to produce. There were huge table-covers beautifully embroidered, centerpieces, sideboard covers, bureau-scarfs, in eyelet work and elaborate patterns of many varieties of

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stitches; there were other kinds of work besides the embroidery—knitting and crocheting, handiwork of all sorts. Every one of the pieces was a positive achievement, showing the skill and training which do not come from squandered time.

A bit of work to catch up, even for five minutes, salts down a goodly sum of time that yields valuable returns in the long run.

Breathing well for spaces of even a few breaths, off and on through a day, is one of the surest investments on the market.

The lunch hour is a challenge to every one of us to use it so it will contribute whatever we most need. It may be reading, or exercise, or rest that is the best investment of the time we have left after lunch. Each one has to determine which is best *for her*, of the multitude of possible investments. That brings us to the second objection to the small-investing of time—that it is not good to be perpetually keyed up; that relaxation is necessary.

RELAXATION is itself one of the most profitable investments, if we are sure we are getting relaxation and not something that pretends to be but isn't. Making the most of spare minutes does not mean doing something every second in a frenzy of desire not to waste time. If rest or relaxation is what we need most, busily engaged minutes of reading or sewing are more than half wasted, if not utterly thrown away. On the other hand, frittering time away is not relaxation. Standing with the weight slumped on one foot, while she gazes out of the window and discusses the shortcomings of a neighbor, is not relaxation for any girl. The muscles and no less the mind need to be in their natural, healthy positions if the time invested in relaxation is to yield returns.

What is the Need for Exercise?

HOW does the food we eat actually renew the tissues of the body? The nourishing elements in our food are taken out by the digestive organs and the blood, passing through the walls of these organs, takes up the food elements. Then the blood, thus enriched, courses throughout the fibers and tissues of the body, and each takes what it needs of the food supply and oxygen carried by the blood.

The blood cannot reach every part of the body, if it isn't given an impulse by exercise. The heart beats, and gives the blood a good start, but exercise must supplement the work of the heart and the valves in the arteries, if the blood is going to do its work of taking food and energy-producing oxygen, to brain and hand and eye.

It isn't to improve on nature's plan that exercise is necessary. *Exercise is a part of the plan.* It is as far from accidental and as truly an element in the mechanism provided for the circulation of the blood as the heart, or the valves which close automatically to prevent the blood from going the wrong way. The heart and valves are involuntary, so we are relieved of responsibility for them, but exercise is a means of keeping the blood in proper circulation which rests with us. If we think that eating a good meal three times a day means that we are properly fed, we ought to remember that the nourishment is for every tissue of the body, and unless the blood is made to carry it to every corner, the food we eat is doing only a part of its work. If we are not exercising enough, the chances are we are starving!

Speed

SPEED, the result of making a short time do a long job, is not the final word. It is a commodity quite useless without its attendants, who are entirely responsible for the value and quality of the speed. What a sorry nag is the speed which runs with carelessness and poor judgment! But the fleet steed whose harness-mates are accuracy and precision, though he be outstripped at the quarter or the half-mile marks, will pass the goal post victorious.

To a man who wanted his son to take a course of study and "get through quick," James A. Garfield once said, "Oh, yes, he can take a short course; it all depends on what you want to make of him. When God wants to make an oak He takes a hundred years, but He takes only two months to make a squash."

All for the Want of a Telephone

By Jas. W. Bellinger, as Narrated to Him by the Employee Who Had the Experience

"For the want of a nail a shoe was lost;
For the want of a shoe a horse was lost;
For the want of a horse a man was lost;
And all for the want of a horseshoe nail."

WE read occasionally of babies being left with obliging people by strangers who "forget" to return and claim their charges, but a much more unusual thing was experienced by a telephone man in Westchester County on October 26, when a full grown woman was left in his care by a stranger and he had considerable difficulty in being disencumbered of his burden.

For the sake of the story we shall call the telephone man "Smith." He was driving an automobile on the Mamaroneck Road when he was hailed by a man who was accompanied by a lady. Bringing his car to a stop, he was surprised to hear the man ask: "Do you know this lady?" "Smith" replied that he had never seen her before in his life. The man explained that the lady was lost as she did not know where she lived. At this juncture the lady gave "Smith" her name and assured him that she lived in the neighborhood, and would recognize her house if she saw it, but could not give the name of the street or the number of the house. *She had no telephone.*

"Smith" gallantly offered to take her in his ca and convey her through the neighborhood for a short time to enable her, if possible, to find her domicile. He drove through several streets asking her frequently if she recognized the neighborhood, but each time received a negative reply. He finally decided to drive to the police station with his charge.

Entering the police station, he recited the circumstances to the officer on duty. The officer recognized the name of the lady and informed "Smith" that she had been "lost" several times before, incidentally giving "Smith" directions from the blotter regarding the lady's residence. When "Smith" returned to his car, the lady indignantly inquired why he had taken her to the police station. He politely told her that he had spent much of his valuable time in an endeavor to help her in her difficulty and was obliged to resort to this means in an endeavor to obtain a clue to the location of her home.

Then "Smith," putting behind him the persistent thoughts of what the time he was losing meant, took the lady to the address indicated by the police officer. He was dumfounded upon arriving there to be informed by the lady that "that was not the place." "Smith" almost gave up in despair. He decided, however, to make inquiry at this house to ascertain if the occupants knew the lady. Fortunately, they had heard of her, as she had at one time occupied these premises herself. They directed "Smith" to a new address, which proved to be the correct one as the lady happily announced upon arrival: "This is it."

Drawing a silver mesh bag from her person the lady generously tendered "Smith" a nickel, which he graciously declined.

That evening, when "Smith" was about to alight from his car at the garage, he noticed something sparkle in the seat beside him. Looking a little closer, he beheld the nickel.

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Main Society

"COURTESY in Business" was the subject of an address by Mr. J. L. O'Toole, of the Publicity Department of the Public Service Corporation, New Jersey, at the 163d meeting of the Telephone Society of New York, Tuesday evening, December 14.

Mr. O'Toole did not indulge in platitudes or make a preachment; he discussed the subject in a plain, straightforward manner appealing to every member of his audience as a fellow-worker in a public utility, and showing how the attitude of the employees themselves benefits or injures their own interests in direct proportion as it promotes the interests of the public and the corporations, or vice versa.

It is not alone sufficient that the changed corporation attitude should now be directed toward publicity which will let the public understand its affairs, and that it should observe the same honesty and good faith that are exacted in the personal relations of private life. These are necessary, and the speaker referred to the Bell System as among the first to adopt this principle. When all is said, the fact remains that the average patron knows nothing of the company itself. The public come in contact with the employees who represent the company, and judge the company by its representatives. Therefore, employees must work in harmony and coöperation with the company, and with each other. For example, he said each commercial man should know exactly what can be done and whether his promises can be carried out. Nothing reflects more seriously upon a company than ignorant or inaccurate representatives and promises which are impossible of fulfilment. So through all the departments; a high sense of responsibility and honor should direct every action.

A forceful and most important point was made when the speaker said:

> Different utility companies must work together, and not take advantage of each other. The strongest arm they can equip themselves with is a sense of fair dealing and consideration for other utility corporations.

Courtesy in business, therefore, is essential. It is the basis of good will. There is no such thing as confidence without good will, and confidence is the foundation of every successful business relationship.

Employees being the points of contact between the company and its patrons, they must realize they are working for the public, "and," said Mr. O'Toole, "the man who serves the public interests best, serves his company best, and thus serves his own interests best," for "the public pays the money the company pays him."

Every employee should be proud of the position he holds, and believe in it. He should feel that he is engaged in a task that is providing a higher standard of living for the public, that he has something in common with them, and that he is in sympathy with them. By deserving confidence, the public will respond.

Referring to complaints, the speaker said they should be treated with consideration and invariably be given the attention due them. And "keep your temper," he added, "remember, you are not the Company itself."

Hudson Section

ON Monday evening, December 6, the Hudson Section held a well attended meeting in the new Telephone Building. Mr. S. L. Van Akin, Jr., assistant superintendent of telegraph, New York Central Railroad, was the speaker of the evening and gave a very interesting paper on "The Utility of the Telephone in Railroad Service." Among the interesting things related by Mr. Van Akin was the conversion of telegraph wires to telephone use and the many unusual conditions that were met and overcome. He brought out the fact that most of the dispatching of trains was now done by telephone, which was proving much faster than the telegraph and more satisfactory in emergencies. He showed that frequently a good telegrapher was not a good railroad man, and vice versa, a good railroad man was not always a good telegrapher, but with the increasing use of the telephone these disadvantages became practically nil and permitted of better all-round training of railroad men.

Interesting remarks were also made by Mr. E. W. Dinan, superintendent of the Mohawk Division of the New York Central Railroad Company, Mr. E. V. Adams, of the Western Electric Company, and Messrs. H. P. Miller, W. B. Eddy, F. L. Flanagan, F. E. Dunphey, and W. F. Henkel, of the New York Telephone Company. Messrs. F. S. Risley, assistant superintendent of the New York Central Railroad Company, J. T. Loree, superintendent, Susquehanna Division, and J. A. McGrew, superintendent, Champlain Division, Delaware and Hudson Railroad Company, were also present as guests of the Society.

The Section elected five new members.

Central Section

Syracuse

THE Central Section held its first meeting in its new quarters in the James Exchange Building, Syracuse, N. Y., on December 8.

The membership committee presented 9 applications for membership, which, with the 33 presented at the November meeting, make a total of 42 new members secured this year.

A very fine program of vocal and instrumental music was furnished by the Blue Bell Orchestra and Quartet, which were organized at the preceding meeting. The Orchestra and Quartet have effected permanent organizations, and it is expected that they will appear at most of the meetings during the coming year.

The paper of the evening was delivered by Mr. E. B. Craft, development engineer of the Western Electric Company, and was illustrated with lantern slides showing the work of the Western Electric Company's Development Engineering Department.

The large attendance brought out at this meeting is considered a good omen for the success of meetings of the Central Section during the coming year.

The Central Section wishes to acknowledge, with thanks, a set of trap drums, for the use of the orchestra, which was presented by Mr. B. C. Wolverton of the Friendship Telephone Company.

Utica

A DISTRICT meeting of the Society was held in Utica, December 15. Mr. C. W. Hitchcock, district manager, New York Telephone Company, presided, and representatives from Watertown, Rome, Utica, Little Falls, Herkimer, Ilion, and other points, were present.

Upon entering the hall the members were greeted with the sight of a large model of a telephone spangled with tinsel and mounted on cardboard, which was the work of Messrs. E. L. McCoy and

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F. B. JEWETT, President, Main Society

J. H. GORDON, JR., Vice-President, Main Society

J. D. NEWMAN, Secretary-Treasurer, Main Society

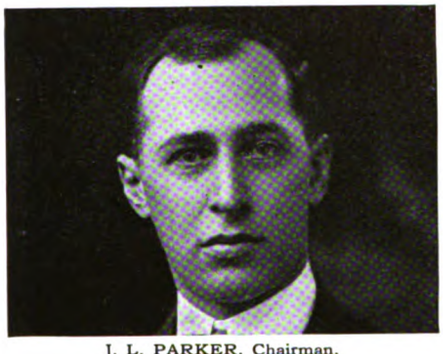
F. L. ARLAND, Chairman, Hudson Section

Walter Nightingale, who have been employed by the Telephone Company since 1879.

The program follows:

Selection by the Blue Bell Orchestra of Syracuse, Mr. W. J. Edwards, director; vocal solo, Miss Bessie Thomas, Utica; recitation, Mr. Fred Hayes, Utica; selection, Blue Bell Orchestra; paper entitled "Reminiscences," by Mr. W. W. Nicholson, Syracuse; vocal solo, Miss Nellie Connors, Rome; recitation, Miss

F. R. GUARDINEER, Secretary-Treasurer, Hudson Section

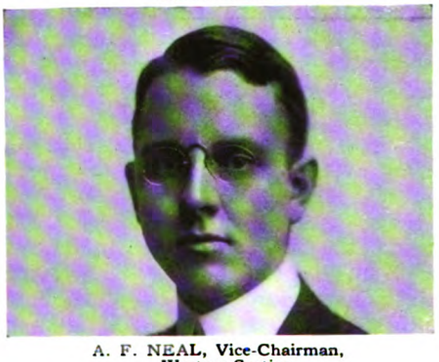


J. L. PARKER, Chairman, Central Section

E. M. GLADDEN, Vice-Chairman, Central Section

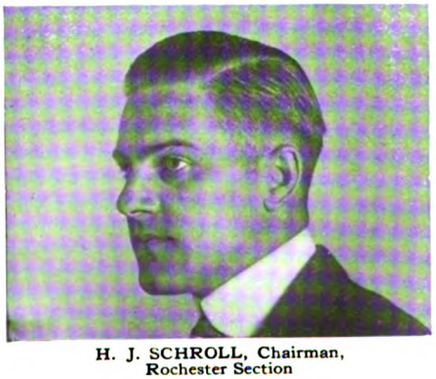
E. P. BRENNAN, Secretary-Treasurer, Central Section.

H. C. STEPHAN, Chairman, Western Section



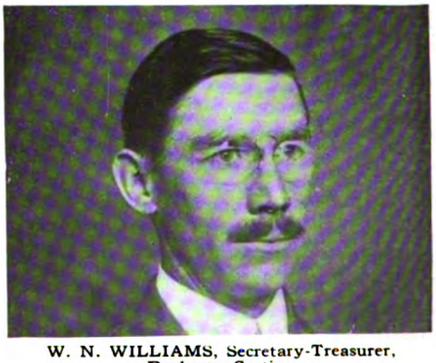
A. F. NEAL, Vice-Chairman, Western Section

P. W. HELFFENSTEIN, Secretary-Treasurer, Western Section



H. J. SCHROLL, Chairman, Rochester Section

Mildred Boff, Utica; vocal solo, Miss Mary Durr; quartet, Misses Bessie Thomas, Nellie Connors, Marguerite Durr, and Mary Durr, with Miss Alice Callahan as accompanist.



W. N. WILLIAMS, Secretary-Treasurer, Rochester Section

Western Section

Buffalo

THE thirty-third meeting of the Western Section of the Telephone Society, was held in the telephone building, Buffalo, Tuesday evening, December 7.

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Mr. E. B. Craft, development engineer of the Western Electric Company, addressed the Society on "The Engineering Laboratories of the Western Electric Company." The paper described the organization of the laboratories and their functions, and outlined their scope of operation. It was very interesting and greatly enjoyed by all.

At this meeting, ninety-five new applications for membership were received.

Rochester

THE twenty-seventh meeting of the Rochester Chapter of the Telephone Society of New York was held in Rochester, Friday evening, November 12.

The speaker of the evening, Mr. T. H. Yawger, superintendent of the Electric Department of the Rochester Railway & Light Company, gave a very interesting address on the "Distribution System of the Rochester Railway & Light Company," explaining the different methods of distributing current for the several needs of the city, such as trolley service, street lighting, house lighting, etc.

After the meeting, a musical program was enjoyed.

THE Telephone Society of New York will reach its twentieth birthday next October.

A small number of A. T. & T. Co. men had been in the habit of getting together during the day from time to time as they had opportunity, and their common meeting place was at the back of Section 44 of the long distance board in No. 18 Cortlandt street, which was next to the first position of the local board of the New York Company. One day in September, 1896, three of these men, while talking things over, agreed that it would be a good idea to form a society and have regular meetings. These three men were Mr. J. S. McCulloh, Mr. Ashbel Green, Jr., and Mr. John J. Gibson. Just which one was responsible for the suggestion may never be known, but the result was that on September 22, 1896, a call for a meeting was circulated and forty-six signatures were secured. On October 3 twenty of the signers met at 153 Cedar street, and after the election of Mr. A. N. Mansfield as chairman of the meeting and Mr. A. A. Marsters temporary secretary, a committee of six was appointed "to consider the questions of organization, constitution, work, etc., and to report to the signers of the call on October 17." This committee consisted of Messrs. E. S. C. May, J. J. Gibson, Edward E. Backus, Ashbel Green, Jr., Frank M. Farwell and George W. Wittemore, with the chairman of the meeting, Mr. Mansfield, ex-officio.

Eighteen signers met on October 17, Mr. Mansfield presiding and Mr. D. N. Marble acting as secretary. The report of the committee was discussed and adopted with amendments, and on October 20 a meeting for the purpose of effecting an organization was attended by twenty-one members. Mr. Mansfield again presided and Mr. Ashbel Green, Jr., acted as temporary secretary. At this meeting the constitution and by-laws were adopted and the following officers and members of the executive committee were elected: Mr. A. N. Mansfield, president; Mr. Ashbel Green, Jr., vice-president; Mr. D. N. Marble, secretary; Mr. S. R. Hall, treasurer, and Messrs. E. D. Brown, E. E. Backus, J. J. Gibson, F. M. Farwell, and E. S. C. May.

The Constitution stated:

The object of this Society shall be the study of matters pertaining to the telephone business, by means of their presentation and discussion by the members and others in meetings.

There has been no change in the Constitution in this respect.

The first regular meeting of the Society was held November 10, 1896, the speaker being the president, Mr. A. N. Mansfield, whose subject was "Principles Underlying the Electrical Transmission of Speech." All the papers for several years were technical, as will be seen by the Society's year book, the first general subject discussed being "The Organization of the New York Telephone Company," by Mr. U. N. Bethell in April, 1901, and the first commercial subject being "The Development of the Telephone System of New York City from a Commercial Standpoint, with a Prediction for the Future," by Mr. F. H. Bethell in April, 1902.

At the end of the first year there were sixty-four members. At the close of the season 1914-1915 there were 3,040 members in the Main Society with headquarters in Manhattan, and 1,119 members in the Hudson, Central, and Western Sections, with headquarters in Albany, Syracuse and Buffalo, respectively, making a total of 4,159.

Central

THE first organization up-State was in Syracuse, and was known as The Northern Telephone Society. In a paper presented by Mr. S. N. Vines, the president, at a meeting of the Society held in Elmira, November 23, 1909, he said:

To Mr. A. W. Deas belongs the credit for starting the movement which resulted in the organization of our Northern Telephone Society, as it was in response to a circular memorandum from him dated July 16, 1906, that an enthusiastic meeting was held in his office in the Telephone Building at Syracuse on the night of July 24, 1906, for the purpose of discussing the matter and determining whether the plan was feasible.

Mr. Deas acted as chairman of the meeting and Mr. M. M. Storke as secretary. It was decided to organize a Telephone Society, and Messrs. B. C. Wolverton, W. H. Horton and O. R. McKenzie were chosen to act as a committee on constitution and by-laws and to present names for officers of the Society for the first year.

The Committee reported at a meeting held on January 8, 1907. Mr. Wolverton presided, a constitution and by-laws were adopted, and the following officers and governors were elected: Mr. H. H. Kennedy, president; Mr. L. D. Layton, vice-president; Mr. M. M. Storke, secretary-treasurer; Mr. A. W. Deas, Mr. O. R. McKenzie, and Mr. P. O. Jacobs. Twenty charter members signed the constitution and by-laws and paid their dues at this meeting.

The Constitution stated:

The objects of The Northern Telephone Society are to promote the art of telephony, and the welfare of those engaged in the industry by means of meetings for social intercourse, the reading of professional papers, and the circulation by means of publications, when so ordered, of the information thus obtained.

The first regular meeting of the Society was held in Syracuse February 19, 1907. Mr. O. R. McKenzie read a paper on "The Telephone Company's Relation with the Public." The Society embraced the entire Northern District—hence its name, and flourished as a separate organization until June, 1911, when it became the Central Section of the Telephone Society of New York. At that time its officers were: president, Mr. A. W. Deas; vice-presidents, Mr. W. W. Nicholson, Syracuse, Mr. J. A. Jamison, Jr., Albany, Mr. W. J. Hiss, Jr., Buffalo; secretary-treasurer, Mr. B. M. Mitchell, Syracuse; governors, Mr. S. N. Vines, Buffalo, Mr. A. B. Thatcher, Elmira, Mr. L. A. Wilcox, Syracuse.

The first election of the Central Section of the Telephone Society of New York, as such, resulted as follows: Mr. W. W. Nicholson, chairman; Mr. A. B. Elias, vice-chairman; Mr. B. M. Mitchell, secretary-treasurer, and Messrs. B. G. Hahn, B. H. Shepard, and A. W. Deas members of the executive committee. At the close of the season 1914-1915 there were 271 members.

THE organization of societies in the up-State divisions was decided upon at a meeting of The Telephone Society of New York, held March 22, 1911. In an article printed in THE TELEPHONE REVIEW in April, 1911, on "The Greater Telephone Society of New York," Mr. D. C. Cox, then vice-president, stated "the purpose of this action is to make it possible to organize section organizations of The Telephone Society of New York in parts of our territory where employees cannot hope to attend regularly the meetings in Manhattan."

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Hudson

THE first organization formed under this amended constitution was in the Hudson Division on May 22, 1911, with 129 charter members. The meeting was called to order by Mr. J. A. Jamison, Jr.; Mr. H. P. Miller was made temporary chairman, and Mr. F. R. Guardineer temporary secretary. At this meeting a constitution and by-laws were adopted and the following officers and executive committee elected: Mr. E. G. Anderson, chairman; Mr. F. R. Guardineer, secretary-treasurer, and Messrs. J. A. Jamison, Jr., E. H. Powley, H. P. Miller, J. P. Hill, G. W. Green, T. J. Meade, R. S. Williams, W. Hills and E. H. Greenleaf. The first regular meeting of the Hudson Section was held in October, 1911, the speaker being Mr. D. C. Cox and his subject "The Duties of an Employee of a Public Service Corporation." In May, 1915, the Hudson Section had 392 members.

Western

THE Western Section was organized in Buffalo on October 4, 1911, Mr. W. J. Hiss acting as temporary chairman. A constitution and by-laws were adopted and the following officers elected: Mr. C. A. Spaulding, chairman; Mr. J. L. Parker, vice-chairman; Mr. Harrison Stewart, secretary-treasurer; and Messrs. W. J. Hiss and F. C. Waite. The section started with forty-six charter members, and on January 1, 1915, had 456 members. The first meeting of the Western Section was held in November, 1911, Mr. Cox delivering the paper that he had read before the Hudson Section in October.

The Rochester members had for some time been meeting there informally, under the leadership of Mr. W. J. O'Hea, but on October 15, 1914, the Western Section formally constituted them a district chapter. The first regular meeting was held on November 24, Mr. O'Hea, acting-chairman, introducing the officers: Mr. M. F. Baxter, chairman, and Mr. F. B. Eilers, secretary.

AFTER this brief historical review of the Society, let us look toward the future. With the great growth in the membership, it has been neither possible nor advisable to confine the subjects at the meetings to technical matters or even to matters specifically departmental. Moreover, various ideas have developed concerning what the most important features of the meetings are. Some think the speakers and their subjects; others, the social features, and still others believe that the meetings should be devoted to matters educational, so that a broader general knowledge of all the departments could be gained. Whatever policy may be pursued, great opportunities exist for this membership of more than 4,000 men in the telephone business to exert themselves and their influence, through the knowledge and inspiration they can gain at the meetings, to become a tremendous potential force for good to themselves and the Company. The officers and members of the Society to-day must determine how to utilize these opportunities and the channels into which their efforts shall be directed. With nearly nineteen years of successful achievement behind the organization, and looking forward to its twentieth anniversary, the Telephone Society of New York can make the season of 1915-16 the beginning of a new era.

INDOOR ATHLETIC GAMES

FRIDAY, JANUARY 21, 1916

71st Regiment Armory, 34th Street and Park Avenue

ON Friday, January 21, 1916, the second annual Indoor Athletic Meet of the down-state divisions will be held under the auspices of the Telephone Club, at the 71st Regiment Armory, Park avenue and Thirty fourth street, Manhattan.

Music will be furnished by the 71st Regiment band, and dancing will commence immediately after the games.

The indoor meet of last year has not been forgotten by those who attended, and it is planned to have the affair this year surpass, if possible, the previous one. Judging from the comments of those present at the 1915 meet, the evening was thoroughly enjoyed by all, and there is no doubt that they will be in attendance again this year. Those who missed this treat last January are advised to secure tickets at once.

The Telephone Athletic Association was recently organized, and all male employees of the down-state divisions are eligible to membership. This Association is composed of the various departments throughout the Company, and is now a member of the Amateur Athletic Union under the Group Membership class.

This set of games will be the fourth held within the past two years, and as records of the competitors are now on file, this will be a handicap meet, so that each competitor will have an equal chance to secure a prize. Each competitor will pay 25 cents general admission, and will be allowed to enter any two individual events without additional fee. For three or more individual events, an entrance fee of 25 cents will be charged in addition to the general admission. Team events will not count as individual entries.

Competitors are requested to purchase general admission tickets at 25 cents and not reserved seats, so that there will be as many seats as possible available for those who desire to view the games.

The athletic program is as follows:

INDIVIDUAL EVENTS

70 yard dash, handicap.
300 yard run, handicap.
880 yard run, handicap.
One mile run, handicap.
¾ mile walk, handicap.
12 pound shot put, handicap.
Sack race, scratch.
Obstacle race, scratch.
Hand line contest.

TEAM EVENTS

One mile interdepartmental relay, teams of five men. Each man to run 352 yards. Handicap.

Tug-of-war, teams of five men. Interdepartmental (three-minute pulls). Regulation indoor tug-of-war equipment will be used.

Three-legged race, 70 yards. Scratch.

Leap frog relay, 60 yards. Scratch. (Teams of four. Closed to office boys.)

The games will commence at 8 P.M. sharp.

There are a number of well-known athletes connected with the Company, who have gained prominence in the athletic world, and this, on doubt, will add to the interest in the events in which they compete. The sack and obstacle races always contribute considerable amusement for everybody.

The prizes are of unusual value and there will be a first, second, and third prize for each event, except the leapfrog relay. The first prize is a gold Waltham watch, 20-year case. The second prize is a gold watch, 20-year case, Swiss movement, and the third prize is a set of very fine military hair brushes.

In the leapfrog relay, a sterling silver medal will be awarded to each member of the winning team, and a bronze medal to each member of the team finishing second.

Tickets are on sale throughout the different departments of the Company. Every seat will be reserved.

Prices: 1,371 seats at 25 cents.
646 seats at 50 cents.
363 seats at 75 cents.
360 seats at $1.
60 seats at $2.

A good view of the games can be had from any seat in the house. Those who have not yet purchased their tickets are requested to make application for reservations at once to the representative in their department who has charge of selling tickets. Ticket holders who are unable to attend are requested to get them into the hands of others who can.

There are two entrances to the 71st Regiment Armory. The Thirty-third street Subway entrance is directly in front of the Thirty-third street and Park avenue entrance to the Armory. The other entrance to the Armory is at Thirty-fourth street and Park avenue.

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Other Telephone Club Activities

Indoor Golf

AMONG the most interesting affairs which have been held at the Telephone Club are the Indoor Golf Putting Contests. These are played over an eighteen-hole course, nine holes being laid out in the Assembly Room and nine in the Gymnasium. The holes used are round metal discs which slope up to the hole in the center like an inverted saucer, so a shot can be played from any direction. They vary in size from 4¼ inches, the size of the regulation golf hole, down to 2 inches in diameter. In order to obtain a variation in the play, obstacles of different kinds are used. These consist of stove pipes through which the ball must be played, holes surrounded by bricks with one or more openings for access, and numerous other devices, new ones being introduced at different times. Mounds are placed under the rugs which give the effect of a rolling green. In the Gymnasium the stage is used for one or two holes, the ball being played up a runner from the floor.

In the last contest, held Monday evening, December 6, a new method was used by which those not golfers were afforded an equal opportunity of winning prizes with those who excel at the game. A bogey for the course (the score which should be made by the best players) was estimated at 60 for 18 holes or 120 for two rounds of the course. Then four classes were made, the numbers for Class A being from 125 to 139, Class B 140 to 154, Class C 155 to 169, Class D 170 to 184. In order to qualify, a player was required to play 36 holes and finish with a score within the numbers specified for the class in which he elected to play, the class in which he competed being selected by him in advance. When all players had turned in their scores the numbers for Class A were placed in a hat and one drawn, the player whose score was nearest to the number drawn being the winner of the qualifying prize for that class. The next eight players whose scores were nearest to the number drawn then played off at match play for another prize, the same procedure being followed for each of the other classes.

The same idea will probably be followed in the next contest to be held during January, except contestants will not specify in advance in which class they will play, this being decided by the score made in the qualifying round, that is, the numbers for Class A will be fifteen numbers beginning at the lowest score turned in, Class B the second fifteen, etc., with a prize to be offered for the lowest score made.

The following is a list of the prizes and winners in the contest of December 6:

Class	*Winner*	*Prize*
A Qualifying	C. A. James	Sweater
A Match	A. L. Seeligmann	Vacuum Carafe
B Qualifying	J. P. Buck	Leather Cigarette Case
B Match	S. A. Miller	Silk Scarf
C Qualifying	J. G. Wentz	Tobacco Pouch
C Match	W. W. Murphy	Umbrella
D Qualifying	A. C. Thomas	Ash Receiver
D Match	E. W. Skelton	Military Brushes

Traffic Night at the Telephone Club

THE Telephone Club was turned over on Tuesday night, December 7, to the Traffic men. The lively program and the good fellowship which prevailed resulted in a tip-top evening. After supper elimination pool and bowling tournaments and novelty billiard and golf contests were played. These were followed by novelty fights and boxing matches in the Gymnasium.

Five points were awarded to the winning teams in each of the pool, bowling, billiard, and golf tournaments, three points to the team finishing second, and one point to each other team entered. Long Island won with a total of eighteen points out of a possible twenty, and the Division Superintendent, Mr. G. L. Yates, received for them a loving cup. In presenting the cup Mr. A. D. Scovel made a short and graceful speech which Mr. Yates entirely neglected to answer when he removed the case and discovered that the cup was made of tin.

The cracker-eating contest and Japanese sword fights by the office boys and the battle-royal rooster fights by the traffic managers excited uproarious laughter. The five real fights were full of action. The potential white hopes were evidently looking for trouble and each found it.

The summaries:

Pool Tournament. Won by Rice and Richardson, for the Traffic Engineers. Runners-up, Orth and Pausley, for Long Island.

Billiard Contest. Won by Hudson, Rhoads, and Rikel for Long Island. Second, Williams, Barrett, and Lynch for New Jersey. Third, Schyrock, Harris, and Williams for Manhattan-Bronx.

Bowling Tournament. Won by McWhinney, Keeler, and Olsen for Long Island. Runners-up, Seddon, Thompson, and Brophy for Manhattan-Bronx.

Golf Contest. Won by Scovill, Hudson, and W. S Salmon, for Long Island. Second, Williams, Harris, and Lawrence for Manhattan-Bronx. Third, Griffiths, Burr, and Conaty for the Traffic Engineers.

Classes in gymnasium instruction are being conducted every Tuesday and Friday evening. Those members who are not taking advantage of this are losing an opportunity to improve health. One of the best known laws of nature is that every man should "sweat by means of physical exercise twice or thrice weekly."

The instruction is directed by Mr. R. E. Moore, one of the best physical directors in the country. There are two classes; one from 5.45 to 6.30 P.M.; the other from 8.30 to 10 P.M.

The annual basketball tournament started on Wednesday, December 15, and will continue every Wednesday evening until the tournament is closed. The eight teams competing are evenly matched, and, judging from the character of games played in last year's tournament, and from present indications, the games this year will be hotly contested.

The old-time favorite game of handball has been started and an elimination tournament (singles) arranged. The games are being played on the gymnasium court every Monday evening at 8 P.M. and Saturdays at 2 P.M.

The annual 5-men team, 10-pin, and 2-men team, duck pin, bowling tournaments are in progress again. There are about eighteen teams entered representing the various departments and divisions, and the interest is very keen to land the coveted "First."

These games are rolled on Tuesday, Thursday, and Friday nights.

There is also the Traffic bowling tournament, being played on the last Monday of each month, which will continue up to and including March 16. The competing teams of five men each represent Manhattan-Bronx, Long Island, New Jersey, and Westchester divisions, and Public Telephone and Traffic Engineer departments. The games start at 7.30 P.M.

The prize bowling for turkeys on Monday and Tuesday nights preceding Thanksgiving was decidedly interesting, and it brought out a large number of "Knights of the Pins." The gobblers were of good stock, and there were quite a few Thanksgiving dinners secured at considerably below market price.

The billiardists are now participating in the annual handicap billiard tournament for the silver trophy. At the close of the carom billiard tournament, the details for the pocket billiard tournament will be announced.

A checker tournament is being conducted, and the Chess, Checkers, and Cards Committee has arranged for a pinochle tournament to be held on the night of January 12.

On Thursday night, January 27, the New Jersey Plant Department will hold forth at the club. There will be a large attendance at dinner at the club, which will be followed by an entertainment. After the entertainment, it will be a "Go-as-you-please" affair, and this will give an opportunity for the "class" to be displayed in the billiard room and on the bowling alleys. The committee in charge is putting forth its best efforts to make the evening interesting, and there is no doubt that a large delegation from the New Jersey Division will be present.

On January 25 the Blue Bell Orchestra will entertain the members with a musicale which will include several vocal selections.

The program is being arranged by Leader Scott, and the one given last season is evidence enough that this will be the musical treat of the season.

Bowling in Syracuse

THE Bowling League in Syracuse finished the first half of its season on December 10. The teams' standing at that time was as follows:

Team	*Captain*	*Games Won*	*Games Lost*	*Percentage*
Tuscaroras	Smith	20	10	.667
Delawares	Doxtater	19	11	.634
Oneidas	Howell	18	12	.600
Senecas	Parker	18	12	.600
Iroquois	Greer	14	16	.467
Cayugas	Coney	13	17	.434
Onondagas	Neu	11	19	.367
Mohawks	Hartnett	8	22	.267

The individual averages follow:

	Name	*Games*	*Total Pins*	*Average*
1	Altenbrant	27	4800	178
2	Doxtater	30	5204	173
3	Torpy	1	173	173
4	Hill	27	4642	172
5	Besant	3	516	172
6	Sullivan	27	4606	171
7	Parker	30	5080	169
8	Taynton	30	5031	168
9	Benjamin	27	4512	167
10	Lane	24	4000	167
11	Geo. Neuman	2	334	167
12	Young	24	3963	165
13	Cholet	3	474	165
14	Howell	27	4412	163
15	Smith	30	4865	162
16	Diffenderfer	24	3899	162
17	Layton	18	2924	162
18	Carter	30	4829	161
19	Marshall	3	470	157
20	Bogardus	26	4068	156
21	Lines	21	3269	156
22	Peters	30	4664	155
23	Coney	21	3259	155
24	Frost	30	4629	154
25	Purdy	3	461	154
26	Greer	30	4602	153
27	Neu	30	4599	153
28	Maitland	27	4124	153
29	Powers	24	3664	153
30	Hubbard	30	4558	152
31	Caney	9	1368	152
32	Potts	30	4546	151
33	Lindenmayer	30	4511	151
34	Greene	15	2265	151
35	Heidel	30	4466	149
36	Hartnett	27	4024	149
37	Leopold	30	4444	148
38	Frateschi	30	4425	148
39	Lasher	23	3419	148
40	Perkins	21	3108	148
41	Slade	2	296	148
42	Haines	30	4407	147
43	Chesterman	18	2626	146
44	F. Shepard	3	437	146
45	Stewart	24	3466	144
46	Holland	30	4229	141
47	Barber	3	424	141
48	Thacher	6	827	138
49	Connelly	26	3563	137
50	Zimmerman	1	136	136
51	Sweet	18	2443	136
52	Eggleston	3	405	135
53	Brownell	3	400	133
54	Dougherty	3	398	133
55	Van Den Burg	9	1156	128
56	Mulvihill	3	385	128
57	Schornstheimer	3	375	125
58	Spillman	9	1103	123
59	F. L. Newman	6	737	123
60	Ullman	1	120	120
61	O'Connell	3	291	97
62	O'Brien	3	290	97
63	Kirby	2	156	78
64	Buchaca	1	70	70
65	Auburskirk	1	58	58

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The TREND of REGULATION

By R. V. Marye, General Attorney

Free Service to Municipality; Franchise Not Binding Upon Commission

IN passing upon the reasonableness of the rates of the Kansas Natural Gas Company, the Public Utilities Commission of that State, upon finding that the company's franchise from the city required it to furnish free gas to the city in consideration of the right to the use of the streets, held that such franchise condition did not interfere with the power of the Commission to fix proper rates for such service and that such franchise ordinances are not contracts protected against impairment by the Federal Constitution. The Commission held further that the furnishing of service to the municipality for such consideration was a species of patent discrimination against consumers who are required to pay schedule prices and should therefore be promptly discontinued.

Municipality Cannot Regulate Rates, Facilities and Service of Utilities

THE Supreme Court of Pennsylvania in the case of York Water Company *vs.* City of York held that although cities may, under their police power, prescribe reasonable regulations for the protection of the health, lives and safety of their inhabitants, even though public service corporations are affected thereby, they cannot, under the guise of a police regulation, determine the reasonableness of rates charged by public service corporations or prescribe regulations relating to the facilities, service or business of such corporations.

Payment in Advance

THE Oregon Public Service Commission, in prescribing rules for the conduct of the business of the Pacific Telephone and Telegraph Company, ordered that the company should be authorized to require payment in advance for metered or flat rate service and to require applicants for such service to establish a credit before the service was delivered. Service may be discontinued for non-payment of bills after written notice of fifteen days to subscribers whose bills are normally made out monthly, and of thirty days to subscribers whose bills are normally made out for periods in excess of one month. A credit is to be deemed established if the applicant for service owns the premises to be served, or makes a cash deposit, or furnishes a guarantor for the payment of his bills, or has paid all his bills promptly for twelve months. The cash deposit shall not exceed twice the average periodic bill, provided that for domestic or residence service it shall not exceed $2.50 and for business service, $5. Deposits unimpaired for twelve months are to be returned to the depositor.

Invasion of Occupied Territory

THE Public Service Commission of Pennsylvania, in denying the application of the Mid-Valley Power Company for the approval of its incorporation, states that where an existing corporation has given fair and adequate service in its territory for a long period and shown its willingness to furnish service at the same rates at which a proposed company offers to serve, it is not advisable to permit the proposed company to enter the territory as there is no public necessity for a multiplicity of facilities.

Hazard of Business

IN passing upon the application of the Home Telephone Company of Bicknell for authority to increase its rates, the Public Service Commission of Indiana states that a telephone company is entitled to a larger return than utilities of other characters since the hazard in the telephone business is much greater than in any other utility because of snow, sleet, lightning and wind storms, which cause tremendous losses to telephone utilities.

Free Service to Commission

THE Attorney-General of Maine has advised the Public Utility Commission of that State that under the statutes of the State the members of the Commission, and its claim agents and employees, are entitled to free transportation on the railroads of the State when engaged in the discharge of their public duties. That while there is nothing in the law that entitles the Commission to free telephone and telegraph service, still if the company is willing to afford it he can see no reason why the Commission should not be permitted to accept it.

Operation Without Franchise

THE Tri-State Telephone and Telegraph Company of Minnesota, having operated for eight years in the City of Thief River Falls without any valid franchise and now having more than 700 telephones in the city, applied to the Railroad and Warehouse Commission of Minnesota for the issuance of an indeterminate permit authorizing it to continue to operate in said city. It appeared that the city had twice attempted to grant a franchise to the petitioner or its predecessors but that in each instance the franchise had been declared invalid because of some omission in the proceedings of the City Council.

The Commission held that it was necessary that a telephone exchange should be maintained in the city and that since the petitioners had shown themselves to be able to furnish satisfactory service they were entitled to continue service and that the desired permit should therefore be issued.

Filed Rate Lawful and Immutable

THE New York Court of Appeals in Pennsylvania Railroad Company *vs.* Titus, held, among other things, that the fact that a railroad company had made a mistake in computing a freight charge and failed to discover it until six months afterward, could not be held to be a waiver or estoppel precluding the recovery of the correct amount, since the rate filed with the Inter-State Commerce Commission is the lawful, arbitrary, and immutable rate, with a knowledge of which all parties concerned are charged. Since such filed rate is the only rate and cannot be varied by the act of the parties, payment of a part thereof by a consignee cannot under any circumstances relieve him from full payment.

Non-Standard Contract

DR. DWIGHT H. MURRAY of Syracuse, N. Y., contracted with the New York Telephone Company for service at $48 per year, the rate fixed in 1887 for six years by a franchise received by the company from said city. The system having been changed to metallic, the company adopted a new schedule, fixing a rate of $60. Dr. Murray has for some time received the metallic service, and he maintained that he is entitled to service for $48 and does not care which kind of service he receives. The company declined to give him service at said figure and upon his refusal to pay the $60 rate discontinued his service.

The doctor applied to the Supreme Court for an injunction compelling the company to continue to serve him at the $48 rate. The Appellate Division of the Supreme Court, in reversing the Special Term which had granted the injunction, held that the grant of 1887 did not assume to regulate rates beyond 1893 and that Dr. Murray's contract did not entitle him to service upon a metallic basis for less than $60; that after 1893 there was no restriction as a matter of contract upon the rate to be charged or against the discontinuance of grounded service. The Court states further that, except in support of contractual rights, the Public Service Commission and not the Court is the proper tribunal in which to litigate the propriety of the rates of a public utility and that therefore, if Dr. Murray has complaint to make as to the rates which he is charged, he must make it before the Public Service Commission.

Messages Between Exchanges Must Go Over Blank or Toll Lines

THE Railroad Commission of South Dakota, in Henry Union Telephone Company *vs.* Dakota Central Telephone Company, states that a rule requiring the transmitting of messages between exchanges over blank or toll lines is reasonable since the telephone business is naturally divided into three classes—local or town exchange service, rural line service, and toll or long distance service, each class occupying a separate field in performing a necessary part of the service, and if an undue disadvantage is imposed upon either branch it naturally follows that that branch will suffer in efficiency. Good telephone practice, the Commission states, requires that each class of business should occupy the field to which it is naturally adapted and should be protected in its right to do so.

Commissions on Business

THE Postal Telegraph Company complained to the Railroad Commission of California that the Western Union Telegraph Company was paying a commission to hotel and storekeepers for messages collected by them, but refused to pay the Postal Company a like commission for business turned over by it to the Western Union. The Commission held that the payment to hotel and storekeepers was payment for services as agents and was not a rebate from the regular schedule of rates since no rebate was paid on the personal messages of such agents; that the Commission could not compel a company to pay commissions to a petitioner who had the same opportunity which it had for establishing agents or stations throughout the field; and that therefore the complaint of the Postal Company must be dismissed.

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Operator *Installer* *Lineman* *Clerk*

The Picked Army of the Telephone

The whole telephone-using public is interested in the army of telephone employees—what kind of people are they, how are they selected and trained, how are they housed and equipped, and are they well paid and loyal.

Ten billion messages a year are handled by the organization of the Bell System, and the task is entrusted to an army of 160,000 loyal men and women.

No one of these messages can be put through by an individual employee. In every case there must be the complete telephone machine or system in working order, with every manager, engineer, clerk, operator, lineman and installer co-operating with one another and with the public.

The Bell System has attracted the brightest, most capable people for each branch of work. The training is thorough and the worker must be specially fitted for his position.

Workrooms are healthful and attractive, every possible mechanical device being provided to promote efficiency, speed and comfort.

Good wages, an opportunity for advancement and prompt recognition of merit are the rule throughout the Bell System.

An ample reserve fund is set aside for pensions, accident and sick benefits and insurance for employees, both men and women. "Few if any industries," reports the Department of Commerce and Labor, "present so much or such widely distributed, intelligent care for the health and welfare of their women workers as is found among the telephone companies."

These are some of the reasons why Bell telephone service is the best in the world.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy ***One System*** ***Universal Service***

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GIVE US MEN!

Give us Men!
Men—from every rank,
Fresh and free and frank;
Men of thought and reading,
Men of light and leading,
Men of loyal breeding,
The Nation's welfare speeding:
Men of faith and not of fiction,
Men of lofty aim in action:
Give us Men—I say again,
Give us Men!

Give us Men!
Strong and stalwart ones:
Men whom highest hope inspires,
Men whom purest honor fires,
Men who trample Self beneath them,
Men who make their country wreath them
As her noble sons,
Worthy of their sires,
Men who never shame their mothers,
Men who never fail their brothers,
True, however false are others:
Give us Men—I say again,
Give us Men!

Give us Men!
Men who, when the tempest gathers,
Grasp the Standard of their fathers
In the thickest fight:
Men who strike for home and altar,
(Let the coward cringe and falter)
God defend the right!
True as truth though lorn and lonely,
Tender, as the brave are only;
Men who tread where saints have trod,
Men for Country—Home—and God:
Give us Men! I say again—again—
Give us such Men!

BISHOP OF EXETER

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The TELEPHONE REVIEW

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The TELEPHONE REVIEW

J. D. NEWMAN, Editor

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The Voice With the Smile

CAN you look at our cover and then doubt that the voice with the smile wins?

Of course,

"—one may smile, and smile, and be a villain";

and "a blockhead with melodious voice" may be a resistless charmer; nevertheless, this only proves the rule that the voice with the smile does win.

Rightly employed, the voice with the smile is like mercy—

"It blesseth him that gives and him that takes,"

and the practice of it creates an attitude of mind which becomes a habit that develops a finer character in the possessor. All good habits do this, but the advantages are not always so immediate and noticeable.

Serving the Public

WHAT is the value of human life? Nothing is so priceless, and no deed is so heroic and divine as to save from death a fellow-being. In all ages the world has acclaimed such heroes and immortalized them in verse and stone and bronze, that succeeding generations should cherish their memory and emulate their example. The test comes, when quick and intelligent action alone will preserve a life that is endangered; it matters not whether personal risk or sacrifice be involved.

In the daily routine of life, we are apt to overlook or regard with indifference thrilling and dramatic episodes which occur almost before our very eyes, and we are especially prone to slight the ever ready means so often at our command to prevent disaster as well as obtain or afford help in times of dire necessity.

Chief among all human agencies is the telephone, and around it have been gathered an army of workers inspired by the same compelling motive, the motive of service. Always there comes before the mind the vision of the telephone operator and her noble achievements, and it is true that she has vitalized the inanimate mechanism which binds into one fellowship the whole country, but it is also true that besides the operators the telephone employees of all kinds are meeting emergencies outside their business in the same heroic way.

When a train was derailed and a trainman hurled into a stream below the trestle, it was only the action of a gang of telephone men working near by which resulted in finding the body, and which by the application of first-aid resuscitated the almost lifeless man.

When a railroad collision occurred, only the readiness and ability of a gang of telephone linemen in another car saved the lives of all but two of the occupants of a sleeper.

When a fire was destroying the home of a man and his family and cutting off every avenue of escape, only the intelligence and bravery of a telephone inspector rescued the sick father and his wife and newborn child, and by his generosity found them a haven of refuge in his own home.

When four members of a family were slowly dying of asphyxiation only through the intelligence and resourcefulness of two telephone operators were a physician and a hospital ambulance secured in time to save their lives, once again adding new luster to the glory of the telephone girl and proving the inestimable value of the human factor in rendering complete telephone service.

These occurrences are told in detail on other pages, but no word too strong can be said in tribute to the spirit of service so splendidly and conspicuously displayed by these men and women of the Bell System.

Making Their Spare Time Count

MR. A. B. WILSON, local commercial manager at Plainfield, has recently been elected to membership both in the American Institute of Electrical Engineers and in the American Society of Mechanical Engineers. The attainment of these distinctions by one of the Commercial Department, whose business does not involve the highly specialized technical knowledge of the electrical or mechanical engineer, is particularly noteworthy. Only the keenest interest in one's business as a whole, over and above the special problems requiring immediate attention, and the most untiring devotion to purpose could have made possible the accomplishment of the study and training requisite to eligibility in either society. To undertake a university course in engineering when one's time is already well occupied by a man-sized job, is an ambitious beginning, and to maintain it through the ups and downs and pressure of months of night work until the goal is attained, is the mark of determination and ability which are good telephone qualities.

The intensive use of spare time affords the most astonishing opportunities for enlarging one's abilities and broadening one's interests. Variation of occupation is necessary to keep the freshness and vigor of attack which is as vital to the enjoyment of one's work as to its quality. When, however, this variation can be made to contribute definitely to a desired end and not be simply variation for its own sake, possibilities begin to grow.

Although Mr. Wilson's strenuous work may be more than most of us would perhaps be wise to undertake, it challenges us to consider what we can make our spare time accomplish. Notwithstanding the limitations of the human machine, it is stimulating to see what can be done "where there's a will." Even where intensive extra work is not advisable for a steady thing, it is usually true that extra pressure can be applied for a time with no ill effect, for the sake of attaining some definite end known to be worth the effort. Moreover it is always true

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that the zest of accomplishment, than which there is no more impelling fore toward success, gives a stimulus to the outside work and no less to the regular daily job.

ANOTHER instance of the unusual results of intensive use of spare time is seen in the career of Mr. Paul H. Burns, attorney of the Company. Mr. Burns was in the Commercial office in Plainfield, N. J., and not content with his duties of commercial nature, he undertook to study law in the evenings. It is an ambitious thing to try to become a lawyer when one already has his days well filled with work, but Mr. Burns accomplished it and passed his bar examinations. Presently things came about. "Heaven helps those who help themselves." Never was there a truer saying. The General Attorney's department of the New York Telephone Company was being formed. An assistant was needed. Who should it be? A trained lawyer? A telephone man? Certain qualities of both were required, but only one man was needed. What was the answer? Mr. Burns. Here was a man who was both a telephone man and a lawyer; his years of practical telephone experience were valuable for the work of the new Legal Department. To find, added to this good foundation of practical telephone knowledge, the necessary acquaintance with the law, was a consummation which could hardly have been hoped for. Mr. Burns was taken over to the Legal Department and later became an attorney for the Company.

The experience of these two men bears witness as nothing else can to the possibilities of spare time. If we make it count for something of permanent value, the results will be worth while.

If the line of least resistance lies toward the work in which we are engaged, it is often possible to reach higher attainments in our own departments than in other fields, by the same degree of intensive application; or if we are better qualified for success in some other department, the Telephone Company affords wide fields in which to develop in the work for which we are best fitted.

Personal Service

A SUBSCRIBER in Flushing, L. I., recently wrote a letter of appreciation to Operator No. 28, thanking her for the "good service you have given me during the year 1915."

"I sincerely hope," he continued, "that you will be in charge of the same wire during the coming year."

Telephone service often seems the most impersonal thing that could be imagined, and it must of necessity remain entirely so in form, though not in spirit. Is it not true that such a feeling of satisfaction in the particular individuality of a certain operator's service means that the subscriber has received something more than just expert telephone service? The element of personal service, of just the kind of "Number please?" that he prefers, makes him a stronger friend of the Company than he would ever have been without it.

Organization Changes

F. R. Guardineer, division collection attorney, located at 9 East 59th street, New York City, will handle all collection attorney work for the Hudson, Central, and Western Divisions, reporting to Manager, Collection Bureau.

The division collection attorney's offices at Albany and Buffalo have been discontinued.

Manhattan–Bronx–Westchester Division

Commercial Department

The following changes in organization in the Commercial Department, Manhattan-Bronx-Westchester Division, were made effective January 3, 1916:

F. W. Hearne, Dey Street local commercial manager, temporarily assigned to special staff duty in the Division Office.

H. L. Wilkins, transferred from Madison Square local commercial office to Dey Street local commercial office.

W. F. Reese, transferred from Greeley local commercial office to Madison Square local commercial office.

P. S. Hopkins, transferred from Murray Hill local commercial office to Greeley local commercial office.

S. E. Lester, transferred from Plaza-Lenox local commercial office to Murray Hill local commercial office.

F. A. Gillick, appointed local commercial manager, Plaza-Lenox local commercial office.

W. E. Huntington, title changed from special agent to credit manager.

W. Hinchcliffe, title changed from special agent to agent.

D. F. Twomey, title changed from correspondence agent and acting supervisor to supervisor.

W. T. Knight, title changed from agent to city collector.

George A. Leimbach, agent in Spring local commercial office, transferred to Advertising Department, special work.

H. J. Carroll, collection clerk, Tremont local commercial office, transferred to Advertising Department, special work.

New Jersey Division

Plant Department

Walter DeRonde, formerly special inspector, appointed supervising line foreman, Newark District.

Harry C. Ryno, formerly lineman, appointed foreman construction line gangs, Newark District.

Hugh McIlravey, formerly lineman, appointed foreman construction line gangs, Newark District.

Patrick Gavin, formerly lineman, appointed foreman construction line gangs, Jersey City District.

John G. Lowden, formerly chief switchman, appointed wire chief, Market and Mulberry central offices, Newark District.

Adelbert G. Wright, formerly chief switchman, appointed wire chief, Waverly central office, Newark District.

Samuel G. Boyd, formerly supervising splicing foreman, appointed electrolysis engineer, Construction Department.

Central Division

Plant Department

D. L. Patrick appointed combination man at Union Springs.

J. W. Hillman, troubleman, Syracuse, transferred to Tully as combination man, vice F. C. Simmons.

Traffic Department

Miss Ida Harvey appointed chief operator, Syracuse-Toll, vice Miss Mary Brown, resigned.

Eardley Carlton Michell

EARDLEY Carlton Michell died at his residence in Ridgewood, N. J., on January 2, after twenty-three years of service with the New York Telephone Company. He was a Pioneer.

Mr. Michell was born in England forty-seven years ago, and at the age of sixteen years came to this country. He commenced his career with the Company February 1, 1893, as a clerk in the Auditor's office. Five years later he became

Eardley Carlton Michell

an adjuster, and January 1, 1907, he was put in charge of the Adjusting Department, which position he held for a year, when he was made Division Auditor, having charge of Manhattan and The Bronx. In 1911 the addition of the up-State territory brought about a separation of the Accounting Department into two branches, Receipts and Disbursements, and Mr. Michell became Division Auditor of Receipts. In 1913 he was transferred to the staff of the General Auditor.

Mr. Michell was widely known among telephone men, and will be missed by a large circle of friends and associates.

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By the Lake Side

Pinning Its Faith on ALBANY

New York Telephone Company Prepares for Telephone Development Which It Foresees in the Capital City of the Empire State

Lotus Beds, Washington Park

THE prominence of Albany as the capital of the State of New York has somewhat obscured the importance of the city as a commercial center. In 1797 the seat of government was transferred from New York to Albany, and for nearly 120 years the city has enjoyed this distinction, but, of course, politically it can never become any more the capital of New York than it was at first. Commercially it is otherwise, for not only does its very history begin with the establishment of a trading post, in 1614, but every year for three centuries Albany has shown a steady and consistent growth in trade and commerce and all that makes a city great.

History

The first settlement was on Castle Island, opposite the city, where in 1614 Dutch traders built a post which they named Fort Nassau. In 1618 the fort was removed to the mainland. In 1624 eighteen families of Dutch Walloons arrived and Fort Orange was built on a hill near the site of the new Telephone Building.

At first the Dutch simply called the place "fuyck" (hook), from the curve in the river at this point, and from this was derived the name Beverfuyck, which it retained until the New Netherlands came under English control in 1644, when the name was changed to Albany, one of the titles of the Duke of York (afterward James II).

In 1686 Governor Dongan granted to Albany a city charter and appointed Peter Schuyler the first Mayor.

Originally a trading post, Albany for a century and a half before the Revolutionary War was one of the most important places in the colonies owing to its strategic position at the gateway of the Iroquois country and at the head of navigation on the Hudson River.

To-day

At present, with a population of about 115,000, Albany is the fifth city in size in the State and the fiftieth in the United States. In twenty-three States there is not a city as large.

The city is served by six railroads, the New York Central, Boston & Albany, Delaware & Hudson, West Shore, Boston & Maine, and Rutland. During the open season water transportation is afforded by the Hudson River and the Erie and Champlain canals. An interurban electric line operates 50 miles west, and freight-carrying trolley systems extend 37 miles south and 72 miles north.

The New York Telephone Company's New Building in Albany

Among the varied industries of Albany are numerous and extensive iron foundries, large blast furnaces, large boot and shoe and clothing factories, numerous factories for the manufacture of pianos, cardboard, metallic wares, confectionery, shirts, collars and cuffs, toys, academic caps and gowns, coal-, wood- and gas-ranges, -heaters, and -appliances, chemicals, etc.

Albany is the second largest express and the third largest mail transfer station in the United States. It is a distributing point for lumber, oil, harvesting machinery, and the products of almost all the large national industries, and is the headquarters of the Hudson Division of the New York Telephone Company.

Albany is the natural trading center of 500,000 people, and its products are sent to every quarter of the globe.

The city's assessed valuations exceed $112,000,000, and upward of $60,000,000 additional is exempt from taxation, making a total of nearly $173,000,000. Four banks of discount and two trust companies have deposits aggregating $76,000,000 and seven savings banks have $80,000,000. The bank clearings in 1915 amounted to $278,966,500; the value of imports, $1,803,314; 80,540,250 pieces of mail matter were dispatched, and 34,859,355 street-car passengers were carried.

Twenty-five public schools and twenty-six colleges and private schools have 742 principals and teachers, and 19,259 students. Eighty-five churches, forty-two clubs, and 414 secret societies and other similar organizations testify to the elevated social atmosphere of the city.

Albany has two daily and Sunday newspapers, the *Argus* and the *Knickerbocker Press*, two evening newspapers, the *Journal* and *Times-Union*, one Sunday newspaper, the *Telegram*, three foreign language newspapers, and seven

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MISS ALICE A. ALLEN

Engaged as Operator for Hudson River Telephone Co., Albany, September, 1898.
Now Chief Operator, Albany Toll.

MISS FLORENCE G. CARNCROSS

Engaged as Operator for Hudson River Telephone Co., Albany, March 13, 1888.
Now Manager Operators' Schools, Hudson Division.

MISS LEILA MacMINN

Engaged as Operator for Hudson River Telephone Co., Albany, April, 1902.
Now Chief Operator, Albany Main.

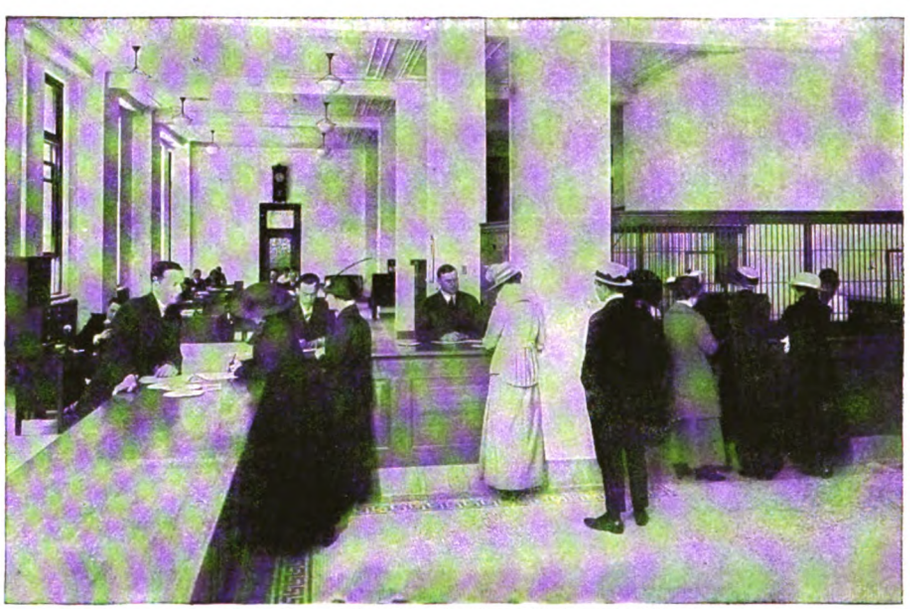
MISS CHARLOTTE SCHUMM

Engaged as Operator for Hudson River Telephone Co., Albany, June, 1899.
Now Chief Operator, Albany West.

religious, scientific, and trade publications, issued weekly or monthly.

Among the live and aggressive organizations which have accomplished much for the benefit of the city are the Albany Chamber of Commerce, of which Mr. J. Y. Read is president, and the Rotary Club, of which Mr. George D. Elwell is president.

The spirit of business enterprise in Albany is shown by the Industrial Building recently erected by 200 citizens to attract new industries and supply adequate floor space and other facilities for manufacturing purposes. Another evidence is the effort to induce Congress to pass an appropriation for deepening the Hudson River so as to permit sea-going steamers to reach the city and make Albany an ocean port. This would enable barge canal boats from the Great Lakes with their cargoes from the West to unload into ocean steamers at Albany.



Local Commercial Office in New Telephone Building

MISS K. HIGGINS

Engaged as Operator for Hudson River Telephone Co., Albany, June 26, 1888.
Now Directory Clerk, Hudson Division, Albany.

MISS CELIA M. KENNEDY

Engaged as Bookkeeper for Hudson River Telephone Co., Albany, October 1, 1892.
Now Chief Bookkeeper, Office Division Auditor Receipts, Albany

MISS ANNA T. COX

Engaged as Operator for Hudson River Telephone Co., Albany, March 2, 1888.
Now Clerk in Division Traffic Department, Albany.

The Future

The natural advantages which Albany enjoys and the steadily increasing development and prosperity which have marked the city's history for 309 years, justify the confidence that discounts the future and prepares for an even greater Albany, an even greater development and prosperity and an even greater demand upon telephone facilities for communication both within the city and with its outlying territory and the most distant parts of the country.

In 1912 a study of Albany was made by the telephone engineers, as a basis for an estimate of its future telephone needs, and at that time it was estimated that:

In 1920 the population would be 120,000 with the number of telephone stations 23,000—in the proportion of 5.4 persons per telephone.

In 1925, population 135,000, telephones 27,000—

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JOHN O'BRIEN
Engaged as Messenger for the Commercial Telephone Company, Albany, August 8, 1879.
Now Wire Chief, Albany Main.

CHARLES M. WALRATH
Transferred from the Western Union Telegraph Company to Become General Foreman for the Commercial Telephone Company, Albany, July 7, 1879.
Now Enjoying Benefits of Pension Plan.

J. A. CARLTON
Engaged as Messenger for the Commercial Telephone Company, Albany, August 1, 1880.
Now Installation Clerk at Albany.

5 persons per telephone.

In 1930, population 150,000, telephones 32,000—4.7 persons per telephone.

In 1935, population 170,000, telephones 38,000—4.5 persons per telephone.

Proving Its Faith

Whether or not the New York Telephone Company will be justified in this estimate will depend only upon whether Albany lives up to the record of its past! At any rate, the New York Telephone Company has pinned its faith upon Albany's doing so, and, to be prepared, the Company has put up a building and a telephone plant adequate to the demand which it foresees.

Facts and Statistics

An interesting summary of facts and statistics regarding the telephone in Albany was given by Mr. F. H. Bethell in an address before the City Planning Association of that city on May 7, 1913, from which we quote as follows:

"The first telephone line here was strung from the office of the Atlantic and Pacific Telegraph Company at 444 Broadway to the residence of Mr. Charles Sewell at Bath-on-the-Hudson. This line was strung in the early part of 1877, about one year after Professor Bell had exhibited his speaking telephone at the Centennial Exposition in Philadelphia. Albany was one of the very first cities in the country in which a telephone was installed.

"Early in 1878 the American District Telegraph Company opened the first telephone exchange at 470 Broadway, over Van Heusen and Charles's store. The following year, a

GROUP OF HUDSON RIVER TELEPHONE COMPANY EMPLOYEES, 1893
Left to Right: Top Row, Standing—Wm. Ayres, Manager, Hudson, N. Y.; E. C. Titus, Manager, Catskill, N. Y.; E. W. Bigler, Manager, Newburgh, N. Y.; Charles Crouse, Manager, Johnstown, N. Y.
Sitting: G. D. Bradt, Manager, Schenectady, N. Y.; Charles Hoff, Foreman, Albany, N. Y.; H. E. Hawley, General Manager, Albany, N. Y.; W. H. Cull, General Superintendent, Albany, N. Y.; Charles Quackenbush, Manager, Kingston, N. Y.; James Tomlin, Manager, Fishkill Landing, N. Y.

WILLIAM R. ADAMS
Engaged as Agent for New York & New Jersey Telephone Co. at Elizabeth, N. J., March 7, 1900.
Now District Manager, Albany.

R. K. ALLERTON
Engaged as Traffic Inspector for Manhattan-Bronx Division December 7, 1905.
Now District Traffic Chief, Albany.

J. H. DODGE
Engaged as Switchboard Man for Hudson River Telephone Co., Albany, June 1, 1906.
Now District Plant Superintendent, Albany.

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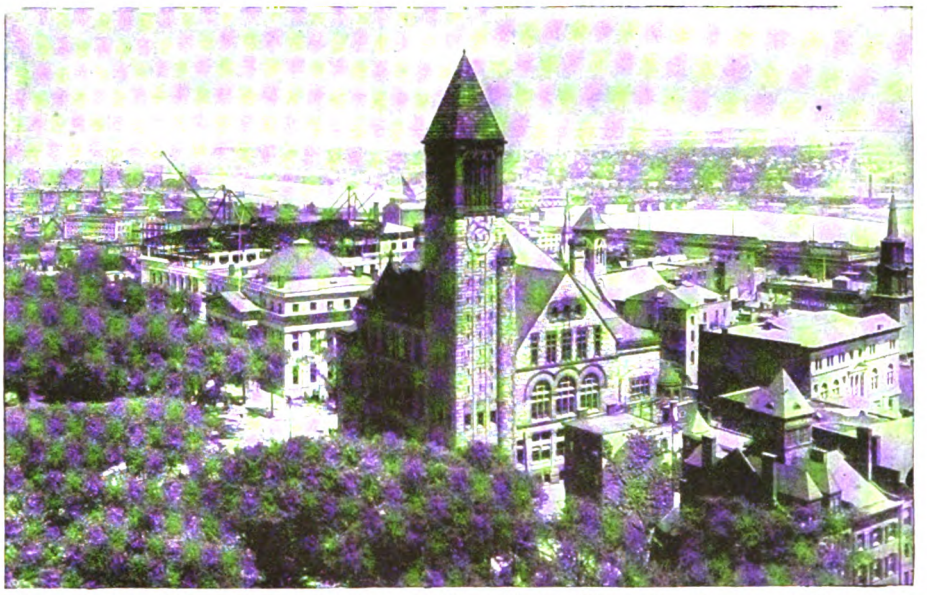


View Looking North from the New Telephone Building, with the Hills of Massachusetts and Vermont in the Distance

second telephone company was formed, with offices at 558 Broadway. A year later, in 1880, these two companies were consolidated in one.

"In 1883, the struggling young Albany company became a part of the Hudson River Telephone Company. In 1891, after a serious fire in the exchange in the Broadway building, the first telephone building in Albany was completed at Chapel street and Maiden Lane. Five years later, two branch exchanges, the West and the East central offices, the East being in Rensselaer, were established. Ten years later, it was found that the first building was inadequate and a large addition was made.

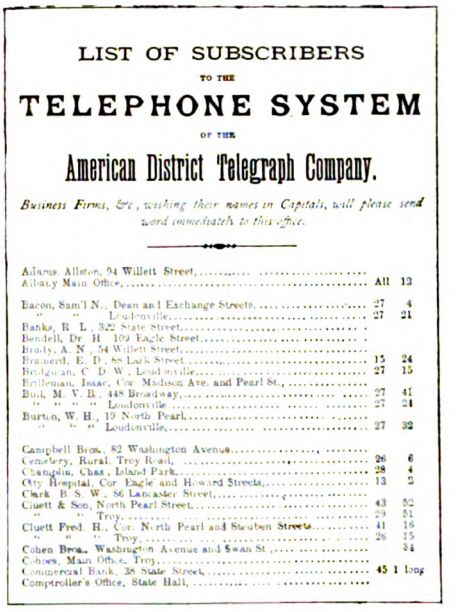
"In 1904 a magneto type switchboard that had been installed but a few years before was replaced by a more modern common battery switchboard. Now, again, that switchboard, which was modern in every respect at that time, is to be replaced ten years later by a switchboard containing many improvements unknown to the art when the present switchboard was installed.

"In 1891 there were about 1,000 telephones in service in Albany. In 1901 there were 4,100, and in 1913 there are approximately 16,000. In 1891 there were in Albany approximately 65 employees; in 1901 approximately 203, and at this time there are 778 people employed here, with a weekly pay roll of $10,015. These employees, all citizens of Albany, are interested in the 'city's' welfare, and anxious to do what they can toward making Albany one of the leading, if not the leading, capital cities of the country."

An Asset to Albany

Telephone development is one of the surest indications of a live and progressive community, and measured by this gauge Albany ranks high.

Within the city, on the 1st of January, 1916, there were 20,190 telephones, in the ratio of one for every 5.9 persons. At the present time there are 767 people employed by the Company in Albany.

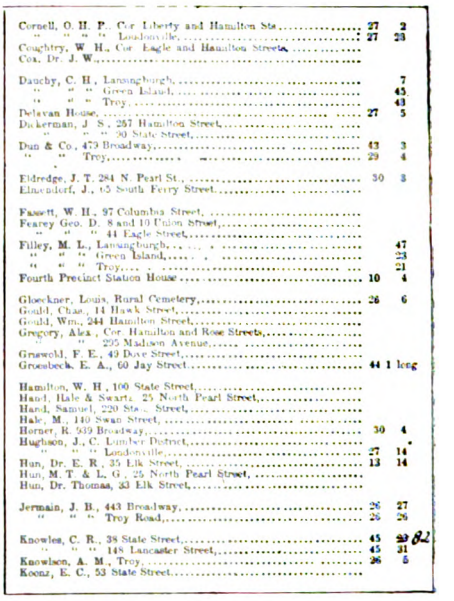


LIST OF SUBSCRIBERS
TO THE
TELEPHONE SYSTEM
OF THE
American District Telegraph Company.

Business Firms, &c., wishing their names in Capitals, will please send word immediately to this office.

Adams, Allston, 94 Willett Street, ... 27 4
Albany Main Office, ... All 13
Bacon, Sam'l N., Dean and Exchange Streets, ... 27 4
" " " Loudonville, ... 27 21
Banks, R. L., 322 State Street, ...
Bendell, Dr. H., 102 Eagle Street, ...
Brady, A. N., 54 Willett Street, ...
Brainerd, E. D., 88 Lark Street, ... 15 24
Bridgman, C. D. W., Loudonville, ... 27 15
Brilleman, Isaac, Cor. Madison Ave. and Pearl St., ...
Bull, M. V. B., 448 Broadway, ... 27 41
" " " Loudonville 27 24
Burton, W. H., 19 North Pearl, ...
" " " Loudonville, ... 27 32
Campbell Bros., 82 Washington Avenue, ...
Cemetery, Rural, Troy Road, ... 26 6
Champlin, Chas., Island Park, ... 28 4
City Hospital, Cor. Eagle and Howard Streets, ... 13 5
Clark, B. S. W., 86 Lancaster Street, ...
Cluett & Son, North Pearl Street, ... 43 52
" " Troy, ... 29 51
Cluett Fred. H., Cor. North Pearl and Steuben Streets, ... 41 16
" " " Troy, ... 26 15
Cohen Bros., Washington Avenue and Swan St., ... 34
Cohoes, Main Office, Troy, ...
Commercial Bank, 38 State Street, ... 45 1 long
Comptroller's Office, State Hall, ...

Albany's First Telephone Directory, Published in 1877, Consisting of Four Pages, 161 Listings



Cornell, O. H. P., Cor. Liberty and Hamilton Sts., ... 27 2
" " " " Loudonville, ... 27 28
Coughtry, W. H., Cor. Eagle and Hamilton Streets, ...
Cox, Dr. J. W., ...
Dauchy, C. H., Lansingburgh, ... 7
" " " Green Island, ... 45
" " " Troy, ... 43
Delavan House, ... 27 5
Dickerman, J. S., 257 Hamilton Street, ...
" " " 30 State Street, ...
Dun & Co., 479 Broadway, ... 43 3
" " Troy, ... 29 4
Eldredge, J. T., 284 N. Pearl St., ... 30 8
Elmendorf, J., 65 South Ferry Street, ...
Fassett, W. H., 97 Columbia Street, ...
Fearey Geo. D., 8 and 10 Union Street, ...
" " " 44 Eagle Street, ...
Filley, M. L., Lansingburgh, ... 47
" " " Green Island, ... 23
" " " Troy, ... 21
Fourth Precinct Station House, ... 10 4
Gloeckner, Louis, Rural Cemetery, ... 26 6
Gould, Chas., 14 Hawk Street, ...
Gould, Wm., 244 Hamilton Street, ...
Gregory, Alex., Cor. Hamilton and Rose Streets, ...
" " " 295 Madison Avenue, ...
Griswold, F. E., 49 Dove Street, ...
Groesbeck, E. A., 60 Jay Street, ... 44 1 long
Hamilton, W. H., 100 State Street, ...
Hand, Hale & Swarts, 25 North Pearl Street, ...
Hand, Samuel, 220 State Street, ...
Hale, M., 140 Swan Street, ...
Horner, R. 939 Broadway, ... 30 4
Hughson, J., C. Lumber District, ...
" " " Loudonville, ... 27 14
Hun, Dr. E. R., 35 Elk Street, ... 13 14
Hun, M. T. & L. G., 25 North Pearl Street, ...
Hun, Dr. Thomas, 33 Elk Street, ...
Jermain, J. B., 443 Broadway, ... 26 27
" " " Troy Road, ... 26 26
Knowles, C. R., 38 State Street, ... 45 29 82
" " " 148 Lancaster Street, ... 45 31
Knowlson, A. M., Troy, ... 26 5
Koonz, E. C., 53 State Street, ...

Southern View from Albany's New Telephone Headquarters, Showing the Big River Steamers and One of the Bridges

Telephone Organization

The business of the city alone makes necessary large forces of men and women, experts in their various departments, for handling contracts and collections and other direct relations with the public, for installing the plant and equipment and maintaining it for the use of the public, for operating the service in the highly efficient and satisfactory manner which is at once the pride and dependence of Albanians, and for the accounting of the receipts and disbursements.

This force is largely augmented by a staff whose jurisdictions extend outside

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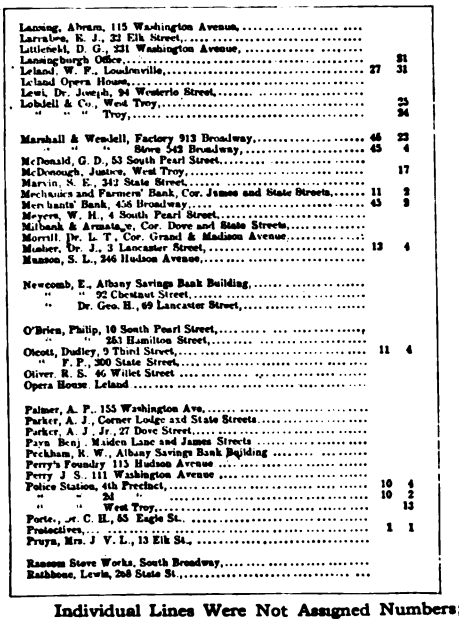
the city and embrace all the urban, interurban, and rural sections of what is termed the Hudson Division, as Albany is a division headquarters of the New York Telephone Company and an administrative center of its own organization.

By centralizing in Albany all the supervision and labor which extend over all the Division, great economies are effected in the number of employees, the amount of floor space and office equipment, and all incidental expenses that are involved, and the benefits are spread throughout the territory in lower rates than would be necessary to support the work if it were divided up among the different localities. Every community has a local organization of such size and character as its particular needs require, and each local representative of the Company, wherever situated, is the agency and medium through which the Company and the public are brought into close and intimate relationship and harmony.

Eastward from the Telephone Buildings the Capitol Hill Slope, and the Hudson and Rolling Country Beyond



Lansing, Abram, 115 Washington Avenue,
Larrabee, E. J., 32 Elk Street,
Littlefield, D. G., 231 Washington Avenue,
Lansingburgh Office, 31
Leland, W. P., Loudonville, 27 31
Leland Opera House,
Lewi, Dr. Joseph, 94 Westerlo Street, 25
Lobdell & Co., West Troy, 24
" " " Troy,

Marshall & Wendell, Factory 913 Broadway, 46 23
" " " Store 542 Broadway, 45 4
McDonald, G. D., 53 South Pearl Street, 17
McDonough, Justice, West Troy,
Marvin, S. E., 342 State Street,
Mechanics and Farmers' Bank, Cor. James and State Streets, 11 2
Merchants' Bank, 456 Broadway, 45 3
Meyers, W. H., 4 South Pearl Street,
Milbank & Armata, r, Cor. Dove and State Streets,
Morrill, Dr. L. T., Cor. Grand & Madison Avenue,
Mosher, Dr. J., 3 Lancaster Street, 13 4
Munson, S. L., 246 Hudson Avenue,

Newcomb, E., Albany Savings Bank Building,
" " 92 Chestnut Street,
" Dr. Geo. H., 69 Lancaster Street,

O'Brien, Philip, 16 South Pearl Street,
" " 283 Hamilton Street, 11 4
Olcott, Dudley, 9 Third Street,
" F. P., 300 State Street,
Oliver, R. S. 46 Willet Street
Opera House Leland

Palmer, A. P., 155 Washington Ave,
Parker, A. J., Corner Lodge and State Streets
Parker, A. J., Jr., 27 Dove Street,
Pays Benj. Maiden Lane and James Streets
Peckham, R. W., Albany Savings Bank Building
Perry's Foundry 115 Hudson Avenue
Perry J. S., 111 Washington Avenue
Police Station, 4th Precinct, 10 4
" " 24 10 2
" " West Troy, 13
Porte, r. C. H., 53 Eagle St.
Protectives, 1 1
Pruyn, Mrs. J. V. L., 13 Elk St.,

Ransom Stove Works, South Broadway,
Rathbone, Lewis, 208 State St.,

Rathbone, Sard & Co., Foundry Office, 30 2
" Sample Room 30 5
Rice, Jno. H., 107 Lancaster Street,
Robbins, P., 161 South Pearl Street,
Rosendale, S. W. 147 Lancaster St.,
Rowland, Henry, 245 Hamilton Street,
" " 27 North Pearl Street,
Russell, Geo. L., 53 Lancaster Street,

Sage, Dean, Lumber District, 28 2
" " Menand's Road, 28 5
Sanders, Mrs. J. B., 21 Washington Ave,
Sard, Grange, Jr. 106 Washington Ave.
Saxe Bros., Lumber District, 26 42
" " West Troy, 26 41
Second Precinct Station House, 10 2
Shaw, C. C. 43 Washington Ave,
Shultz Livery Stable, Cor. Hawk and Elk St.,
Sickles & Miller, 25 N. Pearl St.,
Sickles, H. E., 30 Eagle St.,
St. Peters' Hospital, N. Ferry and Broadway, 13 23
Suttliff, E. A. & Co., cor. Hawk and Chestnut,

Tanner, M. 233 Hamilton St.,
" " 149 Hudson Ave.,
Thatcher, J. B., 84 Lancaster St.,
Thompson, G. B., Lansingburgh, 36
Times, Troy, Troy 14
Towner, S. B., 70 Willett Street,
Townsend's Drug Store,
Troy Main Office, 26 & 29 2

Van Benthuysen, A. L., 154 Swan Street,
Vanderpoel, Dr., Corner State and Eagle Streets, 13 5
Vanderveer, Dr., Corner State and Eagle Streets, 13 13

Ward, Dr. S. B., 135 North Pearl Street, 13 21
Wasson, J. D. 136 Washington Avenue,
Waterford Office, 32
Waters, G. A., Residence, Lansingburgh, 7
Waters & Son Manufactory, Lansingburgh, 8
Welch, J. G., 254 Hamilton Street,
Wendell, Harvey, 14 Jay Street, 45 21
Wendell, N. D., 120 Lancaster Street, 45 5
Williams, W. H., 203 North Pearl Street, 42 4
Williams & Son, 498 Broadway, 42 2
Windsor Restaurant,
Wiswall, Geo., West Troy, 53
Wynans Baggage Express,

Individual Lines Were Not Assigned Numbers; All Party Lines Had Numbers Assigned Them

Albany Headquarters

It was but natural that Albany should be made the headquarters of the Division in which it was located, and it was necessary both for economical and administrative purposes that sufficient and proper housing facilities should be provided in the city.

The Albany building is one of the finest and most beautiful in the city, and is unsurpassed architecturally by any in the United States. It was erected with a view to affording ample accommodations, for many years to come, and for this reason it is larger than the present needs demand, but the extra space has been rented, some of it to State Departments, until such time as the Telephone Company needs it. The equipment and plant, and the number of employees, will be added to as the need is foreseen, always to be ready when the need comes, so as never to require the citizens of Albany to submit to inconvenience or delay after the need has arisen.

The Start in Albany

Many interesting historic facts connected with the telephone are associated with the city of Albany. An article by Mr. Henry W. Pope, entitled "The Early History of the Albany Exchange,"

Due West from the Telephone Company's New Monument to the Future of Albany, Looking Toward Part of the Beautiful Residential Section of the City

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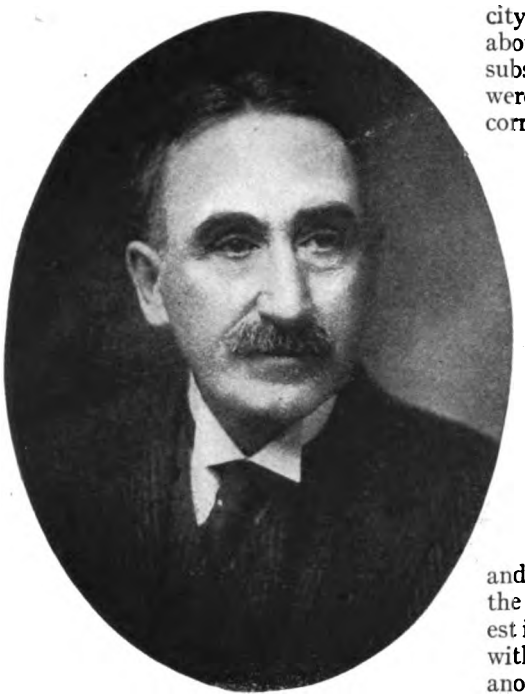


HON. JOSEPH W. STEVENS
Mayor, Albany, N. Y.

was printed in THE TELEPHONE REVIEW for February, 1911, and one by Mr. W. B. Eddy, describing the telephone development in Albany, was printed in October, 1911.

The first telephone line in Albany was strung in the early part of 1877, and in March, 1878, the American District Telegraph Company opened the first exchange, using Bell instruments.

In Albany the Western Union organized the Commercial Telephone Company in 1879.

The two companies were consolidated in the fall of 1880.

The Public's Attitude

It is difficult to understand the conditions in those days. Nobody wanted a telephone; some few became subscribers through persuasion or curiosity, but there was no demand for it. Investors in it were looked upon as visionaries or speculators—far from being public benefactors. Those who owned it were welcome to it so far as the rest of the world was concerned.

Reminiscences

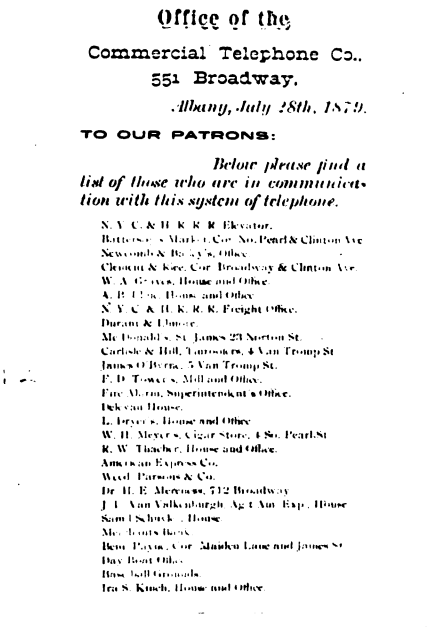
Owing to the early introduction of the telephone into Albany, the people of that city were a little in advance of the public in general in their appreciation of the new invention, but here as elsewhere it was more or less regarded as a toy, a plaything.

Consequently the public of Albany took but little interest in the contest which was being waged in the courts between the Bell and Western Union interests over telephone patents, and in the establishing of competing exchanges in that city. When the consolidation came about, it was found that most of the subscribers had duplicate service, and were paying for two telephones. The correction of this economic error also revealed how few of the people had a telephone at all.

The three oldest employees in the telephone service in Albany at the present time are Charles M. Walrath, 1879, John O'Brien, 1879, and John A. (Dick) Carlton, 1880. A morning spent with these three men developed such a fund of anecdote and incident leading into so many interesting by-paths that a book would not contain them all.

Then there are Miss Florence G. Carncross, 1888, Miss K. Higgins, 1888, Miss Anna T. Cox, 1888, and Miss Celia M. Kennedy, 1892, the four women who have been longest in the telephone business in Albany, with whom an afternoon brought forth another volume of memories.

From these interviews it is possible in a sense to reconstruct the period, although you should have been present to fully enjoy the reminiscences.



Office of the
Commercial Telephone Co.,
551 Broadway.
Albany, July 28th, 1879.

TO OUR PATRONS:

Below please find a list of those who are in communication with this system of telephone.

N. Y. C. & H. R. R. R. Elevator.
Battersons Market, Cor. No. Pearl & Clinton Ave.
Newcomb & Bailey's, Office.
Clement & Kiee, Cor. Broadway & Clinton Ave.
W. A. Graves, House and Office.
A. B. Elme, House and Office.
N. Y. C. & H. R. R. R. Freight Office.
Durant & Elmore.
McDonald's, St. James 23 Norton St.
Carlisle & Hill, Tanrooters, 4 Van Tromp St.
James O'Byrne, 5 Van Tromp St.
F. D. Towers, Mill and Office.
Fire Alarm, Superintendent's Office.
Delevan House.
L. Dryer's, House and Office.
W. H. Meyer's, Cigar Store, 4 So. Pearl St.
R. W. Thacher, House and Office.
American Express Co.
Weed, Parsons & Co.
Dr. H. E. Mereness, 712 Broadway.
J. I. Van Valkenburgh, Ag't Am. Exp., House.
Sam'l Schuyler, House.
Merchants Bank.
Benj. Payne, Cor. Maiden Lane and James St.
Day Boat Office.
Baseball Grounds.
Ira S. Kinch, House and Office.

The First Albany Directory of the Commercial Telephone Company

When the Commercial Telephone Company was formed Charles M. Walrath was transferred from the Western Union to become its General Foreman. There were then twelve subscribers.

The first pole line ran up Steuben street, north on Pearl street, and up Canal street, now Sheridan avenue. There were no crossarms on the poles, only brackets. The first commercial telephone was put in Mr. A. B. Uline's house, 245 Clinton avenue. During the first four months about 500 telephones were installed.

The City Hall. The Tower Is 202 Feet High

The method was to start at the subscriber's premises and work back to the central office. Housetops and trees were used to the nearest pole. Thus many housetops became distributing points. A tripod 10 inches high on a roof would be followed by one 20 inches, and later by one 30 inches high, and there were other fixtures, such as a "goose neck," which ran from the tripod over the edge of the building, a corner iron, and a ridge iron, the latter for the ridge of roofs. Some roofs had as many as twenty to thirty wires on them.

On October 1, 1892, the office was moved to the new building on Chapel street, with 1,260 stations in service. Electric trolley lines had just been introduced into Albany and a new source of trouble for telephone wires created. Electrolysis prevented the successful operaation of the new exchange for some time, but means were devised to overcome it. The primitive method of going out with sledge-hammers and knocking the poles to shake off snow was the usual thing in winter.

The foreman and the chief operator did everything—acted as trouble operator, information operator, wire chief, and performed many other duties.

Soon after Walrath came, John O'Brien and John A. (Dick) Carlton were engaged as messengers. The messenger service was much more profitable and wss considered by the public as much more important than the telephone. The messenger boys performed all kinds of duties; they delivered papers at 3 A.M., tended babies or took them out for an airing, escorted ladies at night, and ushered at the theaters among other things.

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J. Y. READ
President, Chamber of Commerce, Albany, New York

It might as well be said right here that Carlton won his name, "Dick," playing "Richard III" in amateur theatricals. He was promoted from messenger boy to battery boy in charge of the Lockwood, or "crowfoot," a gravity battery having zinc cut in five points, the shape of a crow's foot. The next three years he was an operator, and then had charge of a branch office, corner of Pearl and Hamilton streets. When the "Chapel" office was cut in he was its chief operator. The first chief operator was Charles L. Quackenbush, the second Charles R. Pearl, and Carlton was the third in Albany. The first operator was a young man by the name of Aaron Seeley. There was no night service.

A common occurrence in the central office was described thus:

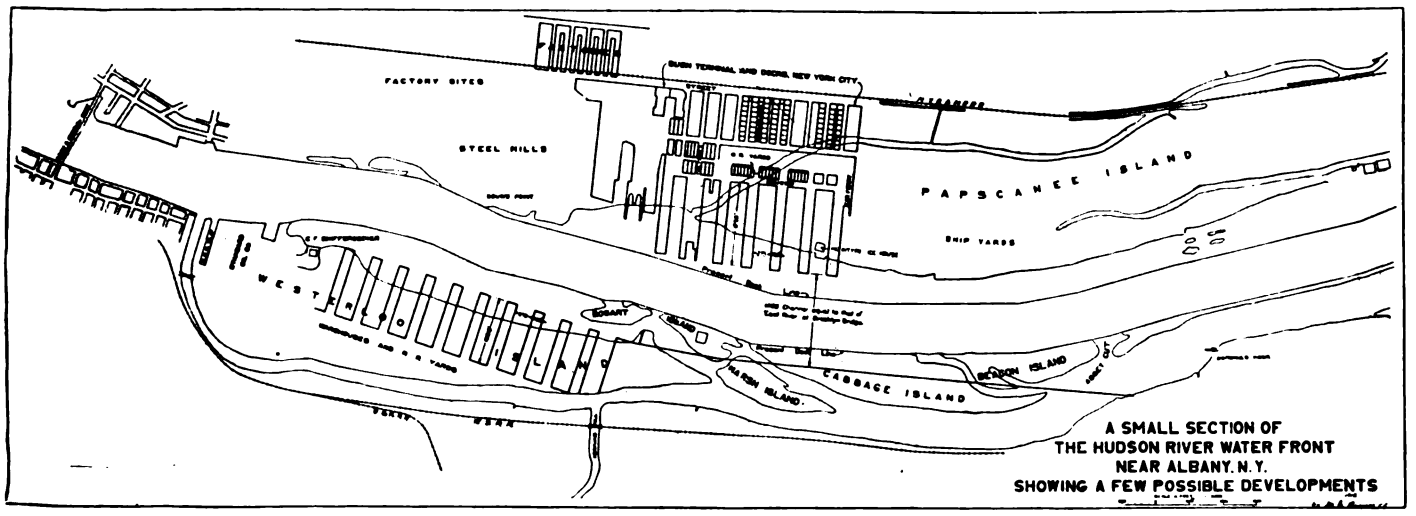
A subscriber would ring and an operator would answer "Hello!" Subscriber, "Give me American Express."

GEORGE D. ELWELL
President, the Rotary Club, Albany, N. Y.

Colonel Mapleson once came to town and gave a one-night show. He engaged twelve boys as ushers. They had just had new uniforms, and after getting their shoes shined and their hair and whiskers trimmed (some of the "boys" wore whiskers) they presented themselves at the theater, each wearing a boutonnière. When Colonel Mapleson saw them, he exclaimed, "I have been all over the world and never saw such a sight!" The next day he wrote the Company a letter.

Albany Industrial Building. Erected to Provide Space and Facilities at Low Rental for Manufacturing and Other Enterprises

Operator, who had American Express line in front of him, would call out to a second operator, "American Express on strap 13." The second operator would probably not hear, being busy with one of his subscribers, or perhaps he would be inattentive. In ten or fifteen minutes the first operator would ask the calling subscriber: "Did you get American Express yet?" Subscriber: "No!—!—!" The first operator would then throw two or three plugs at the second operator, and this would be



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followed by a battle of words, then fists. When the subscriber got tired of waiting he would go to another telephone and ask for the American Express again.

There were no clearing out signals until much later.

The first girl operators replaced boys about 1886. Miss Grace McKinley was the first girl who came to work for the Company. She made out toll checks. Tolls were not billed at the end of the month, but were collected daily. Miss McKinley's sister Jennie was the first girl operator, and Miss Isabel Barker was the first woman chief operator. At first, girls were tried as an experiment, only a portion of the force of boys being replaced by them.

When Miss Carncross came, in 1888, there was no previous training given, and she was put at the board to operate it the best she could. The first day when a call came in she asked another operator, Miss Hattie Eggleston, what she should do. After taking five or six stitches in her crocheting, Miss Eggleston replied, "You will have to learn some time; might as well learn now," and went on crocheting. When the first election day came round, Miss Carncross expressed the fervent hope that she would be married before the next, but, she says, "I was not then as loyal to the Company as I have since become."

After the girls came, subscribers got into the habit of sending in lunches to them at night. If there was an oversight any time, one of the girls would telephone to one of them that "the cat wanted some milk," and nothing more was necessary.

Mr. Uline had the first phonograph in Albany, and used to let the operators make records, to which he would let them listen over the telephone.

The total number of operators in the city of Albany in 1888 was about fifteen. A newcomer had to work two weeks without pay, and then work for $15 per month for three months, $20 per month for three months, $22.50 per month for three months, and $25 per month for three months.

The operating day was ten hours, seven days a week. No extra pay was allowed for overtime, or deduction made for absence. All sorts of excuses were resorted to in order to get time off. One girl was absent for a week "having her shoes repaired."

An inducement to regular attendance was offered by the General Manager, who gave a $10 gold piece to any operator who did not lose any time during the year. Miss Cox, Miss Gilbert, and Miss Higgins each secured the prize five years in succession!

Special service of every description was given, and the operator answered all kinds of questions. If she was not sure, she made up an answer which she thought would best suit the inquirer, regardless of accuracy. Subsequently, a regular information operator was appointed, who, in addition to handling information calls, took complete care of the records and also had charge of sending out trouble-men on cases that arose, and, when necessary, testing with them. About this time also an attempt was made to have some system in the way of operators' being assigned certain positions and given individual receivers, the swinging transmitter still being in use on the board. A superintendent of traffic soon followed. He interviewed and engaged applicants, and the training of operators was instituted. The introduction of supervisors and an evening chief operator naturally followed. The supervisors were a cause of considerable dissatisfaction and frequent disagreements. The operators objected to supervision as taking away their independence.

When Miss Carncross was made chief operator she was put in charge of the Main, East, and West exchanges, and had supervision of all Company attended public telephones and Company operated private branch exchanges. The first private branch exchange was in the police and fire departments, and the second was

THE OLD MANOR HOUSE, RENSSELAER
A Tablet on the Front of the House reads:
Supposed to Be The
Oldest Building in the
United States
And To Have Been Erected In 1642
As A Manor House and Place of Defense
Known As Fort Cralo
General Abercrombie's Headquarters
While Marching To Attack Fort
Ticonderoga In 1758, Where It Is Said
That At the Cantonment East of this House
Near the Old Well the Army Surgeon
R. Shuckburg, Composed the Popular
Song of "Yankee Doodle."

The Old Elm Tree Corner To-day
Tweddle Building and Hotel Ten Eyck Adjoining

Tablet Set in Sidewalk

Old Elm Tree Corner About 1813
Corner of State and North Pearl Streets

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The First Railway Train in the Northern Part of the United States. From Photograph of Mr. E. L. Henry's Famous Picture. It Represents the Start of the "DeWitt Clinton," the Third Engine Built in the United States, from the Old Hickory Inn, Two Miles from Albany, September 9, 1831, on the Hudson and Mohawk Railroad, En Route to Schenectady.

in the A. P. W. Paper Company. The East and West exchanges were opened in 1896, and the name of the "Chapel" exchange was changed to "Main" in 1903.

Frank W. Saybold established the first contract department.

In 1882 the accounting department consisted of Mr. Walter B. Butler, who came from Brooklyn to take charge of the books. He remained with the Company until April 1, 1906. In 1892 there were three employees in the accounting department besides Mr. Butler—Miss Celia M. Kennedy, Miss Katherine Ahearn, and Miss Eva Boyle. Miss Kennedy did all the traveling auditor's work. Mr. Butler's title was Secretary and Auditor.

The State Capitol from the Telephone Building. Photograph Taken Before the Walls Inclosed the New Building, from a Point Now Inaccessible

Not even the wonderful development in the telephone itself during these forty years has surpassed in efficiency the organization of the Bell system. In every department of the Company "Service first" has been the slogan, and the work of every employee has been regulated to contribute to that end.

Packet Boats of this Type Were Drawn Through the Canal in the Old Days by Horses or Mules. Taken from an Old Picture Showing Departure from Albany

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The systems and the methods of the Company in all departments have come to be a standard for the whole world, and experts from practically every country on the globe have been sent to study them.

The New York Telephone Company is proud of what it has been able to do in Albany, and Albany is proud of the New York Telephone Company.

Telephone Etiquette

WHILE we are brushing up our habits for this year and hoping that those same habits will never need brushing up again, some of us may beneficially give thought to the telephone, which waits to be used or abused, according to whether we make it a conductor of good or bad things.

It is so strange that we allow our bad habits to center around the inanimate telephone, as though what we said and the manner in which we said it went into oblivion just inside the little black transmitter and came to naught.

Let us put ourselves on the other end of the wire, where is the jury to judge our telephone etiquette. Why do we not try to visualize our unseen hearer and minimize the instrument itself, important as it is? Let us consider it as a service to be appreciated and cultivated, not as a bit of iron to be banged, juggled, slammed, and shouted into. Why should something so wonderful be turned into a mere receptacle for temper, impatience, discourtesy, and silliness when these things are taboo in verbal conversation?

Let us brush aside these erroneous conceptions of the mission of the telephone; refuse to take advantage of its inanimate construction and converse with John Jones or Mary Brown as we would feel obliged and pleased to converse with them were they with us in person.

If we have clung to the old "hello" system, let us modernize ourselves—telephonic communication has grown more personal and we would not shout "hello" at our entering visitor. "Hello" is obsolete, and now the wire is pleased to carry "This is Mrs. ——," or "Good morning, Mrs. ——."

If we have been in the habit of calling before we were prepared, and thus being obligated to hold the receiver in one hand while we vainly search our desks with the other to the dismay of the busy person on the other end, let us put ourselves in his place and correct this very bad habit.

If we are inclined to occupy a party line, or take up moments when we should be busy, with useless telephonic talk, let us think of the persons waiting perhaps with messages of the sick or dying, or messages which mean the making or losing of a fortune.

Telephone errors are many—some folks rudely omit the respect that is due all of us and call for Brown or Jones, and others think it unnecessary to say "good-by" even though both central and the other party still hold the line.

So let us do our small part in appreciating this convenience for which nobody requested us to pay thousands of dollars, but which does save time, money, and trouble for us. Every time the 1916 telephone call is rung let us say to ourselves, "Now let me see, if I had to do without this telephone, would I not be willing to pay my little bit in patience, courtesy, and consideration for the return of the service?"

Let us make our 1916 personality one to be proud of, by brushing up on our telephone etiquette.—*Newark Evening News.*

No, Clarisse, in calling up Honolulu you do not say "Hello." You simply ask, "Hawaii?"—and the reply comes back over 4,900 miles of Bell Telephone air, "Pretty well, thank you."

"First Aid"

By W. L. Koch, Plant Department, Metropolitan Division

ENGINEERING Bulletin No. 180, recently distributed to Plant Department employees, contains information of great value regarding First Aid work.

We never know when we shall be called upon to render First Aid, and it is then a question of doing the right thing quickly if a life is to be saved.

I have in mind a case of resuscitation from drowning that brought this home to me very forcibly a short time ago. A party of friends and myself were fishing from a motor boat in Jamaica Bay last spring when we suddenly observed, about a quarter of a mile from us, what appeared to be a felt hat floating on the water. On rounding one of the hassocks which abound in this bay, we saw a man sitting on the bottom of an overturned boat. We immediately went to his rescue, but as we came near enough to hear his voice he directed us to the hat that we had first seen, saying that there was a man under it. We discovered not only a man but an unconscious woman, the wife of the man, whom he was trying to support. His strength was all but exhausted and it was with difficulty that he could keep his own mouth above the water; the woman's head was entirely submerged. It was the work of a very few moments to get them both aboard the boat. The man was quickly revived. I devoted myself to the woman, being familiar with the Schaefer method of artificial respiration. Her clothing was quickly loosened and twenty to thirty minutes' work was rewarded with signs of returning consciousness. Shortly after this she was able to understand questions put to her. We arrived at the dock about this time and were very fortunate in securing an ambulance that had been called to another case near by. We learned afterward from the man we had seen sitting on the overturned boat, who was rescued by another boat attracted by our whistle, that in endeavoring to raise the anchor the boat had been upset.

Had it not been for our timely arrival and quick action, one, and possibly two, lives would have been lost, as ours was the only boat in the vicinity at the time.

In contrast to this incident I may cite a case that came to my attention a few years ago. A young man on his vacation at a mountain resort was seized with cramps while in swimming and sank. Within half an hour he was rescued from the water apparently dead, and was left lying on a float without any attention to speak of, because nobody knew just what to do in the emergency. When a doctor finally arrived it was too late. This young man's life might have been saved had proper attention been given, as there are cases on record where resuscitation has taken place after longer periods than had elapsed in this case.

It is therefore a duty for each one to learn the art of rendering First Aid. There is certainly a great deal of satisfaction in knowing that you are able to take care of an unfortunate victim in case of accident, and I would strongly advise employees of all departments to avail themselves of First Aid instructions and be prepared to give such aid when the emergency presents itself. There is one thing that I think should be impressed upon the minds of all persons being instructed in First Aid; it is this: get to work on your patient immediately, for the spark of life may be small and rapidly diminishing. Don't take the stand that the victim is dead on first appearance and past attention. Let the doctor decide that when he arrives. Remember, you can't make a dead man any deader in trying to resuscitate him.

Benefit Payments

THE Employees' Benefit Fund Committee announces that arrangements have been made with the State Industrial Commission, whereby payments will be made promptly to New York State employees who are injured in the course of their employment.

Since the New York Compensation Law has been in effect there has been more or less delay in payments because of the necessity, first of paying through the commission, and later because of the arrangement whereby the amount payable under the Compensation Law was paid at one time and the excess due from the Benefit Fund at another.

All payments after January 1, 1916, to injured workmen in New York State will be paid promptly in the same manner as before the law became effective. There should be no reason for any delay in weekly or other payments to injured employees.

Heard in a Long Island Train

HE—Why didn't you meet me where I told you to?

SHE—I tried to, dear, you told me to wait at the Public Telephone booth in the station, but there are so many, how was I to know which one you meant?

CHAS. R. MCGUIRE, *Advertising Dept.*

"A man's best things are nearest him,
Lie close about his feet."

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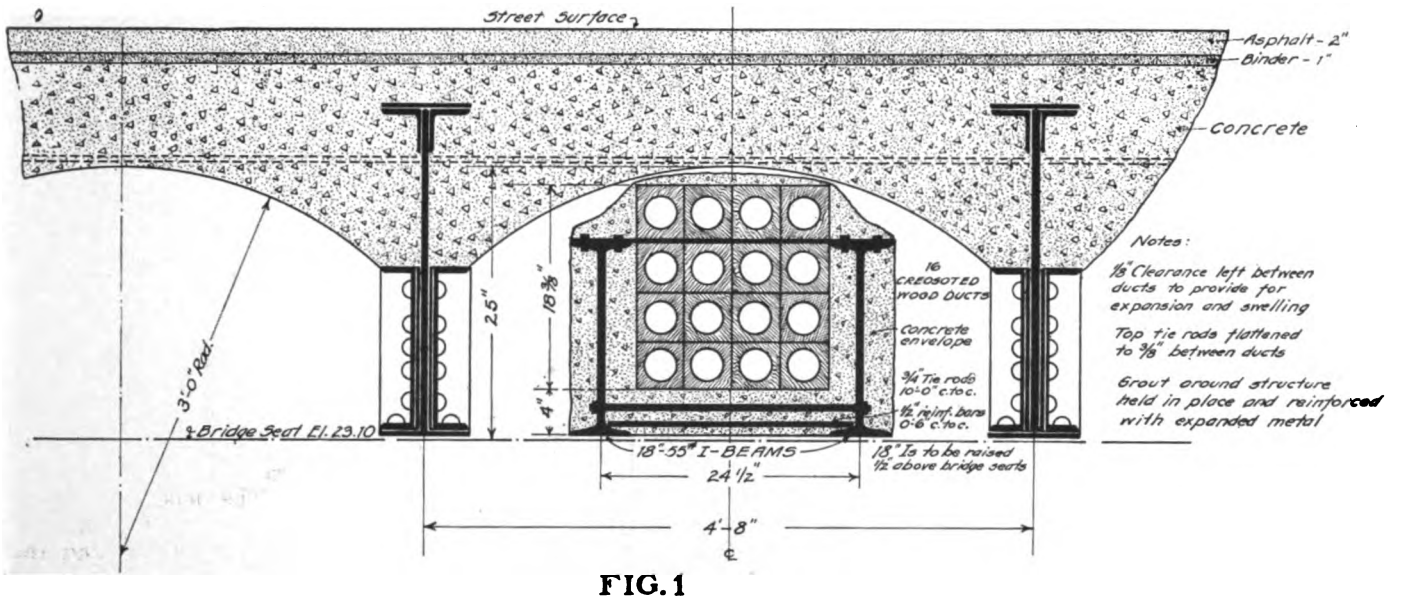

FIG. 1
SECTION OF SUBWAY UNDER BRIDGE
SCALE

Construction of a Subway Crossing on the East 149th Street Bridge Over the Port Morris Branch of the New York Central R.R. Co.

By Clifford M. Hartley, Empire City Subway Company, Ltd.

THE construction of electrical subways, while in a great measure more or less a routine procedure, owing to the standardization of design and methods of construction, is at times productive of a piece of work which is out of the ordinary, and which calls for no small amount of skill in preliminary design, as well as in methods of handling the work in the field.

One of the cardinal principles in the attainment of efficiency is the recognition and adoption of standards, but there are times when we are called upon to perform work to which our standard methods do not conform. The successful performance of such work, it seems to me, is the highest test of an organization, showing that its methods, while generally applied in the routine manner, are of sufficient flexibility to cope efficiently with the unusual.

An interesting example of this condition is found in a bridge crossing recently completed by the Empire City Subway Company, Ltd., in connection with the building of a sixteen-duct subway on East 149th street, from St. Anne's avenue to Trinity avenue. This bridge, which carries East 149th street over the tracks of the Port Morris branch of the New York Central Railway Company, is of the flat arch type of concrete and steel construction. The railway, a double track line, intersects the street at a sharp angle, and the bridge is, therefore, on a skew. However, the girders supporting the arches are parallel with the axis of the street, and of the subway, a fact which obviates the necessity of placing a manhole at either side of the bridge, as has been necessary in some other crossings where the line on the bridge has been at an angle with the approaches.

The railway at this point is in a cut the base of rail being 20 feet below the surface of the street. The bridge structure, formed of 30-inch girders, spaced 4 feet 8 inches center to center, and carrying reinforced concrete arches 12 inches in thickness at the crown, is supported on the concrete retaining walls of the cut, which thus serve also as abutments for the bridge.

The subway line is located on the north side of 149th street and, with the exception of the crossing, which is built up of creosoted wood ducts, is principally of multiple tile construction. However, the purpose of this article being to explain the design and construction of the bridge crossing, we shall confine ourselves to that.

The selection of creosoted wood ducts for the bridge crossing was made on account of the resistance offered by this material to stray electric currents; in other words, because, in using wood ducts instead of iron pipe, the cables are insulated from what has been found by past experience to be almost certain electrolysis, in cases where the bridge to be crossed also carries the street railway. Incidentally, the wood ducts are much lighter than iron pipe, a fact which helps toward economy in design and erection.

In the preliminary consideration of the method of doing this work, there were two different ways which presented themselves. One was to tear up the street, break out one of the bays formed by the arches of the bridge, and build our structure right in place, replacing then the roadway and the concrete work previously destroyed. The other was to build the subway as a monolith, lower it into the trench, and pull it into place under the bridge.

The first method involved the breaking up and removal of about ten cubic yards of concrete composing the arch of one bay, which, under the circumstances,

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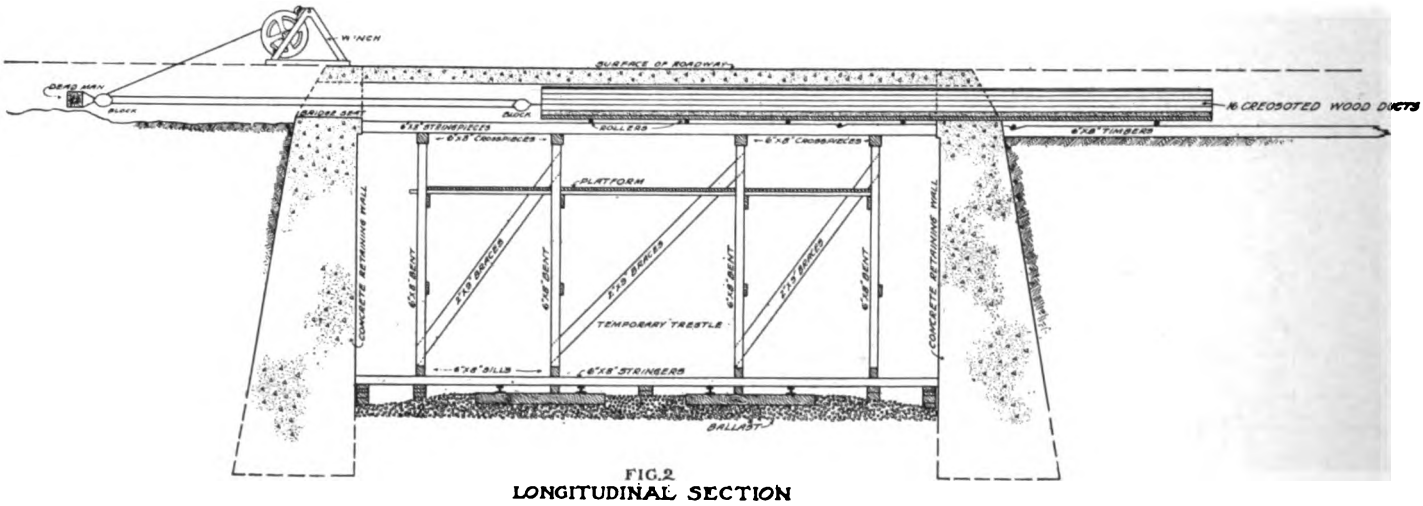

FIG. 2
LONGITUDINAL SECTION
LOOKING SOUTH AT CENTER LINE OF SUBWAY
SCALE

would have been an expensive job. The chief objection to this method, however, lay in the difficulty of properly replacing this concrete work. These arches are all bonded together by the concrete reinforcement, and it was feared that the removal of one of them (which would probably result in injury to the two adjacent ones) would also result in a serious weakness to the whole structure, through the impossibility of again obtaining a perfect bond.

Added to this difficulty, there would be that experienced in building the forms incidental to the reconstruction of the arch. These forms would have to be built after the subway was in place. Owing to the small space in which to work, and to the fact that most of the work would have to be done from underneath, this would have proved a troublesome and expensive course.

It might occur to the reader, in looking at the cross-section of the subway under the bridge (Fig. 1), that the structure could be supported on beams placed between the bridge girders. This could not be done, however, because of the fact that the bridge structure is not designed for such an extra load. It was therefore necessary to design our subway as an independent unit, self-supporting over the same span as that of the bridge.

The second scheme of construction made necessary the casting of the subway as a whole, the lowering of it into the trench and the building of a temporary trestle underneath, as a means of support while it was being rolled into place. After due deliberation, and conferences with the engineers of the railroad company, it was decided to employ the second method (shown in Fig. 2), and the work was planned accordingly.

At the west approach, the trench was carried down to grade, and on the bottom were placed 6 inch x 8 inch stringers to receive the subway and hold it, preparatory to its removal to the final location. On the surface, other 6 inch x 8 inch timbers were placed, crosswise of the trench, and on these supports, where it was freely accessible, the monolithic structure was built.

This design embodied two 18 inch No. 55 I-beams, 41 feet 6 inches long, and spaced 24½ inches center to center, between which the creosoted wood ducts were carried. The two beams were placed on ¼ inch steel plates, which in turn rested on 3 inch x 9 inch sills supported by the aforementioned timbers across the trench. After placing a 4 inch reinforced concrete bottom between the beams, the ducts were laid, four wide and four high, the space between the ducts and the beams filled in with concrete, and the whole incased in a concrete envelope reinforced and tied together with expanded metal reinforcement. To insure further rigidity, a very essential quality, the I-beams were braced every 10 feet, top and bottom, with ¾ inch tie rods, which were bolted through the beams, and embedded in the concrete. The details of this construction are shown in Fig. 1. All metal parts are incased in concrete, and thereby protected from the corrosive influences of the atmosphere and gases thrown out by passing locomotives.

The maximum weight of this subway, with all the ducts occupied, will be 534 pounds per lineal foot, or a total weight of approximately ten tons. In order to pass through the abutments of the bridge, it was necessary to make an opening in the concrete back-walls; this was done with Jackhamer drills operated from the compressor plant in use on the rock excavation.

After allowing the structure, as built, to rest for one week, in order to insure a perfect set to the concrete, preparations were made to move it into place under the bridge. This work necessitated the erection of a "horse" to carry the block and tackle used in lowering in the trench,

No. 3. "Horse" with Block and Tackle Used in Lowering the Subway

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No. 4. End View of the Subway Looking West, the Back Wall of the East Abutment, the Winch and the "Horse"

as well as a temporary false-work underneath the bridge.

This "horse," which is shown in Fig. 3, was built up of heavy timbers, and, with a five-ton triplex hoist, the subway was lowered, one end at a time, down to its bed on the stringers. The actual time consumed in lowering was but about five minutes for each end. On Sunday, December 6, 1915, the most difficult part of the job was undertaken. The preliminary steps in connection with this work consisted of building a trestle to carry the structure across the tracks, and rigging the necessary tackle to furnish the motive power for moving it.

In building the trestle, two lines of 6 inch x 8 inch timbers were placed across the tracks, 9 feet 6 inches apart, concentric with and parallel to the center line of the subway. Across these timbers were placed 6 inch x 8 inch sills, four in number, which in turn supported four bents, each 13 feet 11 inches long, properly braced and bolted, and carrying crosspieces. On top of these crosspieces, which were made of 6 inch x 8 inch timbers, 4 feet long, ran stringers, on which the rollers were to revolve. The trestle was so designed in height as to bring the bottom of the subway structure level with the bridge seats, the clear span between which is 35 feet 6 inches.

A hand-winch was placed alongside the trench, on the east side of the bridge, and a "dead-man" secured in the trench. To this a block was fastened, a tackle run through the bridge and made fast to the subway, and all was in readiness for "a long pull, a strong pull, and a pull all together."

In order to ease this pull somewhat, and to aid in getting the mass in motion, a jack was placed against the west end of the subway, by the use of which it was possible to get a slow and easy start. When once under way, it was not difficult to continue the progress by means of the winch, as the structure moved on rollers made of sections of 3½ inch iron pipe filled with concrete and the track was given a slight pitch toward the bridge.

It was of course imperative that a nearly perfect alignment be preserved while the subway was being moved, and this was accomplished by marking the center line with a chalk mark along the top, and then keeping this lined up with a chalk line stretched through from one end of the bridge to the other. After once getting started, the structure was in place on the bridge in half an hour, the ends resting on ½ inch steel plates placed on the bridge seats. Fig. 4 shows an end view of the subway, looking west, the back-wall of the east abutment, the winch, and in the background the "horse" used in lowering.

The design of the work described in the foregoing paragraphs, as well as the method of carrying it on, was made under the direction of Henry S. Swain, chief engineer of the company. Its execution was in the hands of Foreman Joseph Spizzi, Supervising Foreman John Hall, and Division Engineer George Nostrand.

Not Wanted

"Please, ma'am," said the maid, "there's a man at the door with the new telephone directories."

"Tell him to go away," replied her mistress. "I haven't read the old one yet."—*Sunday World.*

"Hello, Central, Give Me Heaven" doesn't seem half so impossible as it did. New York City is now talking with the Pacific Coast. So you see, we're getting pretty near to the Golden Gate, thanks to the New York Telephone Co., which gives such good service hereabouts. —*Amityville Sun.*

"Central" for Protection

ON December 15, at 3.45 P.M., a subscriber called on Central for protection. When the operator answered her signal, the subscriber said, "Central, wait a minute; someone is downstairs and I'm frightened!" The operator waited on the line, ready to connect with police headquarters, when the subscriber flashed and said: "They're gone now, but were trying the door. Thank you, Central, very much."

HELEN M. PENDERGAST,
Flushing Chief Operator.

A Good Remedy

A SUBSCRIBER of good financial standing who manages, however, to get on the "calling list" each month, recently wrote us: "Mr. Man, why do you always call me up? Why don't you go after your dead ones?" Apparently she was annoyed because her responsibility didn't relieve her from paying promptly. A little salve of tact and diplomacy promptly applied helped along our collection average thereafter.

HUBERT C. SMITH, *Nyack Commercial.*

Plant Coöperation and Emergency Value of the Telephone

FIRE broke out in the summer residence of Mr. LeGrand C. Griswold, Crow Hill Road, Mount Kisco, N. Y., at 2.30 P.M., Saturday, November 13, and totally destroyed the house. After the alarm had been turned in, the receiver having been left off the hook, Assistant Wire Chief W. W. Emmeluth ordered the line put upon test and supervised until the wires were burned. As soon as a car could be obtained, Wire Chief Ross with Trouble Hunters Murphy and Rhuda and Installation Clerk Paige hurried to the scene, arriving about 3.30 P.M. Mr. Ross interviewed Mr. Griswold, suggesting the installation of the telephone in his garage. After some hesitation, Mr. Griswold ordered the work done and about 4 P.M. the station was installed and working.

At 6 P.M., an hour after the firemen returned to Mount Kisco, fire broke out in the woods, directly in the rear of where the house formerly stood, and the temporary telephone was the means of saving the garage and the valuable woodland.

EDWARD W. JACKSON, JR.,
Mount Kisco Commercial.

LEGAL DEPARTMENT—Do you know that the Nature Lovers' League is going to have J. J. Carty arrested for cruelty to animals?

ADVERTISING DEPARTMENT—That so—why?

LEGAL DEPARTMENT—Oh, they figure that the birds won't have any place to sit when the wireless telephone is perfected.

E. W. KILGORE, *Copywriter.*

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The Splicing of Duplex Cable on Long Island

By F. H. Meeks, Long Island Plant

THE accompanying pictures show the splicing up of about eight miles of duplex cable on Long Island, between Farmingdale, Hicksville, and East Norwich.

Picture No. 1 shows the splicer and helper on platform with cable opened up and making ready for a capacity balance test.

Picture No. 2 shows the splicers were right after the placing gang. In this case the pole is being stepped after the splicer had got there.

Picture No. 3 shows the splicer setting up cable stubs in box and making ready for a knuckle splice.

Picture No. 4 was taken while the splicer was in the act of wiping up an upright insulated splice; you can see he is real busy and has not got time to look at the camera like the men in the other pictures.

No. 5 shows a condition where the old existing 50-pair cable is being spliced into the new duplex cable temporarily to give service until such time as the pole line beyond this point is rebuilt to meet the proper conditions.

Picture No. 6 shows tester and capacity balance set; the tester was making a test for the man in picture No. 5.

Picture No. 7 shows a completed job, with a 28-pair loading pot placed on pole using the galvanized stand, which is being used in the Long Island Division.

The eight miles of cable are composed of:

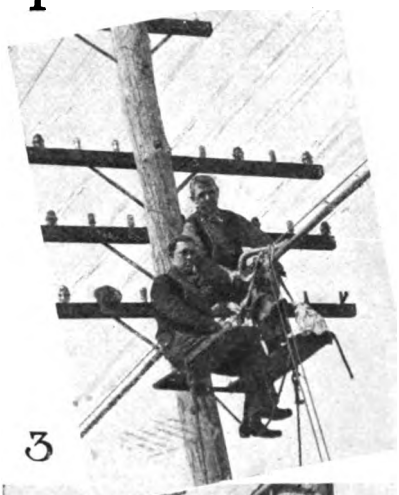
2 miles of 100 pair with 12 quads of 16 gauge.
2 miles of 50 pair with 12 quads of 16 gauge.
2 miles of 100 pair with 19 quads of 16 gauge.
2 miles of 75 pair with 19 quads of 16 gauge.
6 28-pair loading pots.

There were 102 splices to be made, including insulated splices, random splices, A, B, and C test splices, and terminals. The terminals were spliced in at the same time that the A, B, and C splices were completed; that is if they came on the same poles. This cable was placed to relieve a bad open wire condition, which was blown down twice last spring during the sleet storms.

The completion of this makes a complete circle, which is so flexible that trunk wires can be cross-connected to meet almost any condition which may arise.

I almost forgot picture No. 8, which is a double exposure; if anything like this existed, we would soon hear someone making a noise.

1



2

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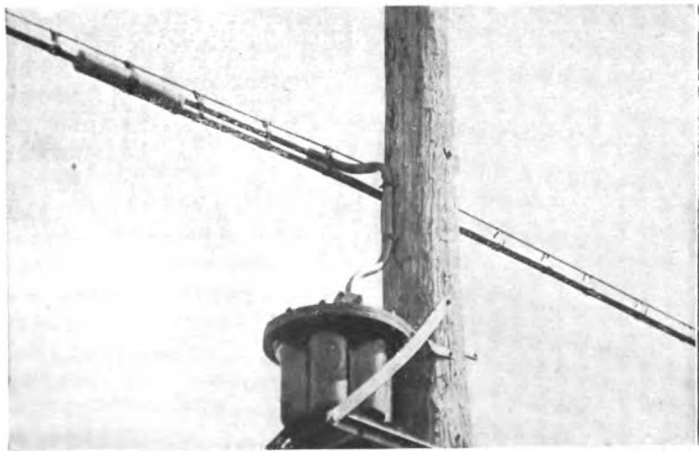

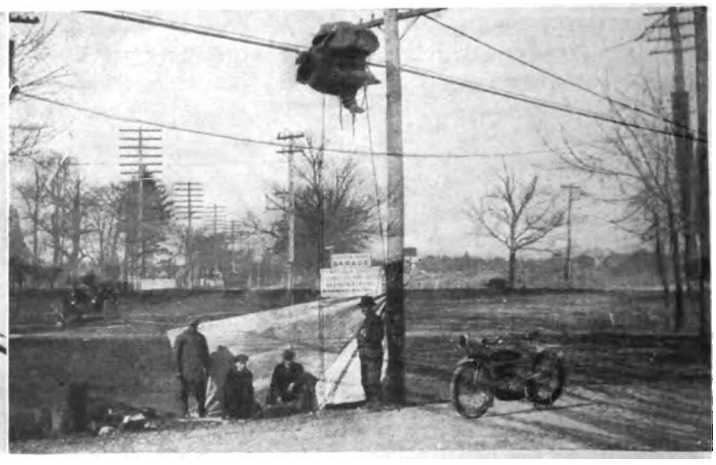

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Telephone Linemen, Using "First Aid" Knowledge, Save Trainman's Life

By H. W. Fluhrer, General Manager, Otsego and Delaware Telephone Company

THE immeasurable value of the "First Aid" training of Bell employees was brilliantly exemplified by three linemen of the Otsego and Delaware Telephone Company recently, when a special train of one coach was derailed and thrown down a twenty-foot embankment near where the linemen were at work. Webster Chase, George Cooper, and Ralph E. Rarick were engaged in re-transposing toll circuits, just after stringing two new copper circuits, when the train passed them. It had passed about four pole sections beyond where they were working when a crash, the sound of escaping steam, and the flash of two high-tension transmission wires coming together caused our men to hurry down the track. They found the locomotive upside down, and the tender on its side, but the coach still upright, as it had been prevented from upsetting by a high-tension pole. No one, apparently, was hurt, but when the occupants of the coach had regained the top of the embankment, it was found that Dennis J. Sullivan, one of the trainmen, was missing.

Lineman Cooper walked up to a trestle over a small creek just ahead of the wreck, and noticed what appeared to be a suit of overalls and jumper floating in the creek. He ran down the bank and waded into the water. When he took hold of the clothing he saw immediately that it was the missing trainman, who was half submerged in the water, his head entirely under. Cooper shouted to the other linemen and in a moment they ran down the bank into the water, and the three carried Sullivan up onto the bank.

Our men, mindful of their "First Aid" instructions, acted immediately upon the first principles to be applied in a case of drowning, and got to work, turning the trainman on his stomach and starting artificial respiration. They worked over him for something like five minutes, but there was no sign of life. Then they took the body further up the bank and laid it across a railroad tie, Cooper standing a straddle of Sullivan's body working his chest in and out, Chase supporting the trainman's head and keeping his mouth open, while Rarick and the engineer worked his arms up and down, endeavoring to start respiration. Still no sign of life appeared. The railroad officials who had been traveling in the special car insisted that the man be turned on his back, but the linemen knew that this was wrong and that their "First Aid" instructions were to place a drowning man on his stomach. Therefore they paid no heed to the entreaties of the railroad officials, but kept on plugging, and at the end of twenty minutes Sullivan began to show signs of life, and regular breathing seemed to start. A few more minutes and he was breathing regularly, but was still unconscious. The boys then ran across a field to a farmhouse, where they secured a door from an outbuilding. They placed Sullivan on this and conveyed him to the farmhouse, reaching there about the time a doctor, who had been summoned by telephone, arrived.

FIRST AIDERS
Left to right: Webster Chase, George Cooper, and Ralph Rarick

It seems that Sullivan had been sitting on the tender, and must have been thrown violently through the air for a distance of some forty feet, evidently dropping into the creek face downward, and being rendered unconscious by the shock of the fall. If it had not been for the prompt action of Cooper in dragging Sullivan from the water, and the heroic efforts of himself and the others in keeping up artificial respiration and following the instructions they had received in "First Aid," the trainman would never have returned to life.

The appreciation of the railroad for the splendid work done by our men was expressed in the following letter from one of the officials:

> Our Superintendent wishes me to extend our sincere appreciation and thanks or the prompt manner in which your linemen, George Cooper, Webb Chase and Ralph Rarick, went to the aid of trainman who had fallen in creek near Milford when special train became derailed at that point, yesterday.
>
> They seemed to be thoroughly conversant with duties of "First Aid" and no doubt this man would have drowned but for the splendid work they did to restore his respiration.

The Gentle Pole Line Gang

OCCASIONALLY complaints are received from the public that our men do not behave themselves as "knights of old." Sometimes they equal Sir Arthur.

The pole line gang mentioned in a recent report was composed of gentle creatures.

Serial No. 9528 called for doing some pole work in Scarsdale. It was necessary to place an anchor on private property. When the gang started to place this anchor, a lady appeared, said a few words, and the gang gathered up its tools and left the premises immediately without protest. Upon investigation by the right-of-way agent it was found that the lady, who was French, merely talked to the men in her own language, said good morning, and told them that they could have what water they wished, for the asking, it being a very warm day.

This is all the evidence necessary to convince the average man that we do employ gentlemen; sometimes they are extremely gentle.

M.-B.-W. PLANT.

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Linemen Heroes of Railway Wreck

THE ROCHESTER CONTINGENT OF THE TELEPHONE HEROES OF THE RAILROAD WRECK
Left to Right: Martin J. O'Brien, Howard Armstrong, Joseph Rodgers, Charles F. Briggs, Edward T. Collins.
Sitting, Center Foreground: Foreman Harry E. Wicks.

A FORCE of Western Division linemen distinguished themselves and reflected great credit upon the Company for the presence of mind, ability, and spirit of coöperation which they displayed when a railroad wreck occurred near the Delaware Water Gap on the night of December 23. The linemen were returning to Buffalo and Rochester from the New Jersey Division where they had been helping in the restoration of the lines broken down by the big storm.

They had left Hoboken about nine o'clock in the evening, in the second section of the train. Having come to a stop near the Water Gap this section was crashed into by the third section. The rear car was telescoped, but the telephone men, being in the third car from the rear, were themselves unhurt, although they were thrown violently from their seats and berths. All hands hurried to get onto the scene of the actual disaster, and were outside, starting in with the rescue work almost immediately.

From the report of Mr. W. Getter, foreman of the Buffalo force, we get the following facts, although much must be read between the lines.

On seeing the wrecked car and thinking what could be done to help, the telephone men took hand axes and rushed to the aid of the imprisoned passengers. Some entered the front vestibule of the wrecked car and began to chop a passageway to the injured people within, others worked up from under the car, and still others broke through the windows from the side. A colored woman, found by those who got into the car, was so pinned in that partitions, parts of berths, and splinters of the car had to be chopped away before she could be freed, and she was taken out through a hole in the floor made by the men working under the car. Although she was immediately wrapped in a blanket and cared for in one of the coaches, efforts to save her were not successful.

The linemen working at the windows succeeded in chopping away some of the wreckage and assisting one of the passengers through a window and into another coach to be cared for.

The men inside the car worked hard to free the passengers. Each one of the linemen seemed to be striving to see how much he could do. Some got farther into the wreck than others, and those who did found the hardest work to do, but the same spirit was in each man's mind. Four other women and one girl were rescued from the wrecked car by the linemen who succeeded in getting inside.

At last all the passengers were accounted for, but the porter was still missing. One of our boys climbed to the top of the wreckage piled over the locomotive which had plowed half way through the car, and with the assistance of a few others dug away some of the timbers until the body of the porter was found. It was impossible to free it, however, without the help of the wrecking crew.

When the relief train arrived the conductor's cry of "All aboard!" sent all the passengers into their cars, where again the characteristic telephone talent for meeting emergency was displayed in the readiness of the linemen to give up their berths wherever more accommodations were needed. The inconvenience was temporary, however, as another car was attached at Scranton.

Experience gave the Western Division linemen more than she promised when she took them traveling, but she couldn't phase them. From the comment and appreciation expressed at the time of the disaster, and since, it is plain to see that others learned what many had known before, that telephone people are good to have around in time of need.

BUFFALO FORCE. LINEMEN WHO BECAME LIFE SAVERS
Top Row: (Left to Right) M. F. Lotz, W. Getter, D. J. Kreger, J. M. Benzee.
Front Row: F. J. Carver, C. A. Witherell, C. P. Howe, F. Bryant, J. V. Haggerty, F. E. Williams, J. M. Umphreyville, G. W. Columbus.
Kneeling: C. L. Blake.

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The Human Factor

Operators Save Four from Asphyxiation

COMPLETE telephone service includes the human element necessary for emergencies, and this the operators assure in abundant measure. They are perpetually on guard and competent to render extraordinary aid, of which the value is beyond computation in life and death crises.

On the night of January 6, at about 12.45 A.M., a subscriber in Buffalo called for Dr. Long, saying to the operator, "I am in a hurry." The operator, Miss Grace M. Vail, completed the connection and then notified the Acting Night Chief Operator, Miss Florence Speich, that the subscriber had called for a doctor and seemed very much excited. The subscriber flashed and asked for Dr. White, saying that Dr. Long was out. This physician also was away, and the subscriber called for another by name, as he could not remember the number. Miss Speich happened to know the number and the connection was made without delay, but again the doctor was out.

The subscriber cried, "Get me any doctor, for everyone in the house is dying," and left the telephone with the receiver off the hook. Sounds indicating that someone was in great distress could be heard over the wire by the operator.

Miss Speich then called two more physicians, but both were out. The next one she called was at home, and he advised her to call an ambulance so that the people could be taken to a hospital. She called a hospital at once, but they were for some reason unable to send their ambulance and it was necessary to make still another call before an ambulance could be secured. The Lafayette Hospital responded at once and both the ambulance and the doctor summoned by the operator arrived in time to save the entire family of four persons from death by asphyxiation.

The letter written by the subscriber, Mr. Wm. H. Nagle, expresses in some measure what the intelligence and readiness of the operators meant to this particular family when only the active, positive, human element of the telephone service could have helped them. A machine, to do just what it was told or operated to do, would have been no more use in this emergency than the pictures on the wall; the only thing that could save the dying occupants of that house was a thinking human being who could take charge of the situation. This the operator did, and the telephone became the saver of four lives because of the human factor behind it.

Mr. Nagle's letter reads as follows:

Wm. H. Nagle B. J. O'Day
Whitman Machine Company

BUFFALO, N. Y., Jan. 10, 1916.

New York Telephone Company, Mr. J. J. Welch, Division Supt. of Traffic.

DEAR SIR: I wish to commend the excellent service rendered by your company to myself and family on the night of January 6, when we were all overcome by gas. I cannot praise too highly the coolness and resource of operators Nos. 27 and 37. Especially No. 37, who, I afterward found out by inquiring, when we had all been overcome, and unable to use the telephone, judged by the strange actions of the instrument and the noise she heard over it, that something was wrong. By her prompt action in summoning aid she saved four lives as, only for her coolness and presence of mind, all would have died had not help reached us within thirty minutes. With my heartiest thanks to your company and especially the employees who saved our lives on that night, I am,

Yours very truly,
327 Auburn Ave. WM. H. NAGLE.

Telephone Man Rescues Three from Blazing Roof

FRANK AUGUST BURGESS
Plant Inspector, Buffalo

FRANK A. BURGESS, inspector, Buffalo, saved an entire family from a tragic death shortly after midnight on January 3. Walking toward his home, Burgess discovered flames coming from the rear of a grocery store in the ground floor of a two-and-a-half story frame house. He immediately telephoned to fire headquarters and returned to the house to arouse the occupants and be of assistance.

Meanwhile the occupants of the house, Melville L. Clarke, his wife, nine-days-old son, the nurse, and a maid, had awakened; the maid and nurse made their escape from the burning building without injury, but before Mr. Clarke was aroused by the smoke, all avenues of escape had been cut off by the flames. Mr. Clarke had very recently suffered from an attack of appendicitis and was still confined to his bed, and Mrs. Clarke was still under the care of a nurse. With the aid of Mr. Burgess they succeeded, however, in reaching the roof of the building, having time not even to dress, but simply to wrap a blanket around the baby.

From the roof there was no means of escape, and when the fire truck arrived the situation of the family on the housetop was perilous. A ladder was immediately lifted and Burgess, assisted by two firemen, carried them safely to the street. The entire family were hurried to Mr. Burgess's home, where they were given prompt and hospitable attention. Although they suffered from shock and exposure, at the last report recovery seemed assured.

The spectacular rescue in which Mr. Burgess was the leading figure was witnessed by hundreds of persons, and nowhere, perhaps, could they have viewed a truer expression of Bell Service ideals.

Lectures and Loops

NO doubt not a few who have lecture assignments could relate some interesting or amusing experiences that occur, in connection with the lectures given by representatives of the Commercial Department.

In arranging for a lecture recently, the usual inquiry was made as to whether the hall was wired for electric lights. Receiving the assurance that the hall was wired, an electric stereopticon was provided.

Mr. E. L. Prosch, of the Newark local commercial office, who was to deliver the lecture, found, much to his dismay upon arriving at the hall, that, as reported, the building was wired for electric lights, but had not been connected to the street service wires.

As the hour for the talk was close at hand and the hall was rapidly filling, prompt action was necessary. Mr. Prosch, along with Operator Brooks of the Advertising Department, hit upon a plan to string an "ærial loop" from the meeting hall across the adjoining lot to a church on the corner, and then tap in on the panel box, in this way obtaining "juice" to operate the machine.

After a strenuous half-hour, of splicing odds and ends of wire, a loop of barely sufficient length to reach the desired goal was secured. The audience viewed two dirt-begrimed but nevertheless happy representatives of the Telephone Company, and was not tardy in expressing its appreciation for the demonstration of resourcefulness in overcoming an obstacle which, at first, threatened to send the audience home without having been entertained. All of which points to a moral: To be sure of your source of current, be sure of your source of information.

E. W. WOLLMUTH,
Local Com'l Mgr., Newark, N. J.

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The Tenpenny Nail

IT was rather a large office, and the diversity of character of those who worked in it would have furnished munitions for the dramatists of the world. Nothing would have been more stoutly denied, however, by those very workers, than that there was anything unusual or stirring in their daily routine of clerical work, or in themselves. Unusual—they were right about that, but stirring and dramatic—their eyes were closed.

There was Evelyn Milbury, a little stoop shouldered, with big round eyes and a deliberate manner. She had left high school just before final examinations of her senior year because she didn't see any use in bothering with all that reviewing when she was going right into business and would forget it all anyway. At the next desk little Betty Carston, whose dancing eyes and two disappearing dimples made everybody cheerful, had a mind like a human dynamo and hands as swift as an operator's, but wasn't too busy to pass the time of day. Across the aisle was Miss Ramsay, quiet, rather frigid sometimes, but "a wonder of a worker," and beyond her Miss Frost, who always finished at five and never made a mistake—in fact, was inhumanly perfect—and next to her Miss Parmelee, who wore earrings. And there were a good many more and each one affected the ideas and character of every other, this way or that way, and not one of them knew it.

The head of the department, or The Chief, as he was always known among the force, gave out at random every morning, small rectangles of cardboard on which were written spicy observations about the job, or mottoes with punch, which were to be applied to the work of that particular day. No one must tell what verse she had because the cards were shuffled up and used two or three days in succession, and half the fun would be spoiled if the "pep inducer" received at the beginning of the day was not a surprise.

"These things don't fit half the time," Evelyn Milbury complained in rather a high voice with a little drawl, one morning as she dropped her card among some loose papers on her desk and pushed the mass back out of her way. "What do you think mine says to-day? 'A t——' "

"*Don't tell* me!" Betty Carston interrupted. "It would spoil the whole point if we told. Sometimes it doesn't seem to apply, but I've always seen before the day was over that it did—except once, when I got 'Are you big enough for the job ahead?'" And Betty, who was the smallest girl in the office, fairly bubbled over with mirth. It wasn't so funny as she thought, for in spite of Betty's diminutive stature the "job ahead" was likely to come to her almost any day now. But she wasn't thinking of any such possibility; just now she was thinking of Evelyn Milbury and wondering how it happened that after nearly a year in the office Evelyn "missed the point" of things so often. "She's the way I was when I was learning to skate—she doesn't get hold of it, only she doesn't know she doesn't. If I could just help her catch on—but she'd be offended. Anyway, I'd better be about my own work."

Evelyn picked up her card again and looked at the words, "A tenpenny nail is no good until it is driven. Don't be a tenpenny nail." She looked a long time and then shook her head, observed to herself that the supervisor never had to tell *her* to hurry, put the card down and forgot it.

Late that afternoon the supervisor summoned Miss Milbury to a quiet corner, showed her a number of record sheets which Evelyn had forwarded as completed, to be sent to Division Headquarters, and pointed out that some of the most important computations had not been made. "If I had let those go through without examining them closely it might have lost thousands of dollars to the Company. How did you come to leave out anything—especially that?"

Miss Milbury's big round eyes opened a little wider, as she explained, "I didn't know how to do that. I wondered what those blanks were for, but I didn't know."

Why hadn't she asked? What of her responsibility for those sheets? She hadn't thought of that side of it at all!

She took the sheets again, made the calculations carefully and well and returned them to the supervisor in just the right shape. The supervisor wondered a little, but she saw the truth. "Don't take everything simply at its flat value. Remember what it means. Remember you're responsible," she said. "Perhaps you've never been given much responsibility in your life, and you forget there is such a thing. Don't forget it, though; run after it; it's the first step to advancement; don't let yourself have to be driven to it."

The next morning Evelyn Milbury heard a merry chuckle. "Oh, I wish you could see my verse! It's the funniest thing." Betty was rosy with mirth and delight. "I can hardly wait till we're through with this set so I can tell this one—that will be to-night, won't it? Good! I'll have to go some to-day, though, to keep ahead of this."

And "go some" Betty did. She fairly radiated dynamic force. Evelyn looked across at her from time to time and wondered where Betty got so much energy.

Once when she was wondering this she noticed a blank on the sheet before her that she didn't know how to fill. She looked back and saw similar blanks on the sheets she had finished. These were different from the sheets of yesterday, but suddenly she thought of the supervisor and her idea of responsibility. Perhaps here was another case where she ought to "run after responsibility."

Betty seemed to be disposing of things on her desk in a capable fashion, as if she could handle anything else in the office just as swiftly and masterfully. For the first time Evelyn actively, positively wished she handled her work that way. She had never thought of it before. She would ask Betty about these sheets.

"Got any time, Betty?" she asked.

"Sure-lee."

Evelyn showed her the sheets. Yes, she knew how to do them, she had done them herself before. But here was something wrong. If that went through, what would happen? Betty pointed out a big discrepancy, which neither one of the girls could trace or account for. Evelyn wondered what she had better do about it.

"Why, take it up to the supervisor. Some of the figures on the data you were given must have been wrong."

"But I haven't anything to do with that," Evelyn demurred.

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"Of course it isn't your fault, but it would be if you saw it was queer on your sheets and didn't ferret it out. You're responsible for the sheets, you see, so you don't want to risk their being wrong, no matter whose fault it was at first," and Betty gave her neighbor a friendly push up the aisle.

The supervisor received Evelyn with a smile. Evidently yesterday's experience had not been ignored, like so many previous ones since Evelyn had been there. Was she waking up—getting the grasp on her work?

The mistake proved to be of the utmost seriousness. If it had not been caught the results would have been disastrous not only to some important receipts of the Company but most certainly to the jobs of those who had permitted such a mistake to slip by. When the proper action to obtain the correct figures had been taken, the supervisor turned to Miss Milbury and gave her a cordial handclasp, congratulating her on having stopped the course of "such an insidious and serious error." Evelyn Milbury went back to her desk with a vigor she had never felt toward her work before. She had done something that really counted, she thought. Yes, Evelyn Milbury had waked up.

That night she turned to Betty as they closed their desks. "Oh, you saved my life to-day, Betty," she said, more vivacious than Betty had ever seen her. "That was an awful situation that you made me run down. But it's fixed now, and I feel as if I'd done a real day's work, thanks to you."

"Fiddle," returned Betty, "I didn't do anything."

"Well, if you didn't, it was as good as a tonic to see you going at things to-day. What possessed you, anyway?"

"Oh," Betty laughed, "I was trying to keep ahead of the Chief's card. What do you think it said—"A tenpenny nail is no good until it is driven Don't be a tenpenny nail."

Telephone Rescues Money

A GUEST on the thirteenth floor of a hotel was handling money near an open window when a gust of wind appropriated one of the bills and hastened out the window with it. The man immediately turned to the telephone and told the P.B.X. operator what had happened. With the usual quick thinking, the operator knew at once what to do. She called the baggage man, who was situated just inside the entrance to the hotel, and he hurried a porter into the street. Looking up the man saw the banknote just passing the fifth floor! The telephone saves money in more ways than one.

President Wilson Telephones to Newsboys

A UNIQUE and interesting page in the history of long distance telephoning was written on Monday, January 17, when President Wilson, sitting in the White House, talked to several hundred youngsters in the Boys' Club, corner Avenue A and Tenth street, New York.

The demonstration was in connection with the ten-day campaign of the Boys' Club Association of New York in their effort to raise half a million dollars for the Boys' Clubs of the city, and was a part of the program of the publicity committee, of which Robert S. Scarburgh, advertising manager of the New York Telephone Company, was chairman.

Sixty receivers had been installed by Mr. H. A. Goldner, of the A. T. & T. Co., in the gymnasium of the club that afternoon, and at eight o'clock fully 500 boys were crowded into the room waiting to hear the President's voice.

Mr. Scarburgh was in charge of the demonstration, which was given by courtesy of the New York Telephone Company, and sat with Lewis DeForest Downer, superintendent of the Boys' Club, and R. H. Street, division supervisor of advertising for the New York Telephone Company, within the square of desks where the boys were lined up with their receivers. The Washington end of the demonstration was arranged by J. H. Claggett, Contract Manager for the Chesapeake & Potomac Telephone Company. The boys were grouped and arrangements were made so that after the President had spoken a few seconds the boy listening should hand the receiver to the boy immediately behind him so that the number who actually heard the President was several times the number of receivers.

A few minutes after eight o'clock the signal came from the White House and Mr. Scarburgh answered:

"This is Mr. Scarburgh speaking."

"This is Mr. Foster, secretary to the President, speaking. Are you ready?"

"The boys are all at the receivers, Mr. Foster. Do you hear me clearly?"

"Perfectly, the President is coming into the room."

Then the dignified, clear-cut voice of the President was heard on the wire.

"Hello."

"Hello, is this the President?"

"It is."

"Mr. President, this is Mr. Scarburgh, one of a committee raising $500,000 to extend the work of the Boys' Club of Avenue A and the Newsboys' Club. We have now about 5,000 members, ranging in age from seven to fifteen years. There are several hundred of the boys assembled here with telephone receivers at their ears waiting to hear your voice. These boys are sturdy, independent little chaps who only need an opportunity and an inspiration. The new quarters will afford them more opportunity and nothing could be more inspiring than a few cheering words from the President of their United States—for, Mr. President, they are all real Americans."

In spite of the fact that there were several hundred boys from seven to fifteen years of age in the room, and boys, too, capable of making considerable noise, as they proved later, it was as still as death in the big gymnasium when the President's response came back over the wire from Washington:

"I am very glad," he said, "to have the opportunity of addressing a few words to the boys. I hope you will have all success in your great work. It is one of the first signs of friendship for the youngsters who bring us our newspapers. My sympathy has always been for the boys. I wish them all a Happy New Year."

When he had finished, the boys gave three lusty cheers and in response to an inquiry from Mr. Scarburgh, Assistant Secretary Foster said that the President had smiled his approval of the cheers when he had left the telephone.

There were many humorous and some pathetic instances in connection with this long distance talk of the chief representative of the nation to some of its smallest and humblest ones.

The New York *Tribune*, for instance, tells the following little story in its account of the demonstration: "One little youngster confessed last night, to the mingled rage and chagrin of 500 boys who didn't get a receiver, that it was the first time in his life he had ever listened on a telephone and he didn't understand a word. 'I didn't know how to listen,' he said, 'but I heard a noise.' "

A notable feature in connection with the demonstration is the fact that although the word that the President would talk to the boys was not received by the Telephone Company until two P.M. that day, the wires and receivers were all in position long before eight o'clock and the demonstration as usual went through without a single hitch of any kind.

Increased Use of Police Telephones

THE police of New York report having used the telephone 8,289,150 times last year, an increase of 3,000,000 connections over the total for 1914. The figures have an interest as measuring in a way the access of departmental activity, and likewise as illustrating the development of statistical records in municipal administration. They possess a far greater interest, however, as showing what the telephone has become in the matter of police protection to the public.

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Further Suggestions for Our Business Letters

WHAT have our readers to contribute to the discussion of business correspondence and its requirements? It is a question which concerns us all, for whether or not we are in a department where the writing of business letters is a part of our work, we all have occasion to write letters more or less frequently, and all the pointers we can obtain from those whose experience has given them valuable hints for improvement will prove useful, perhaps invaluable.

In regard to accurate stenographic work, indispensable in the strong business letter, our stenographers may enjoy this diverting reminder, which appeared in the *Cornell Widow:*

When Rastus Johnsing's son arrived
He looked just like his poppy.
In fact, the doctah done declared
He was a carbon copy.

Mr. H. Bell, local commercial manager at Englewood, contributes some excellent ideas, which will prove helpful to us all, and which will perhaps inspire further valuable suggestions.

I WAS very glad to see that a recent issue of THE TELEPHONE REVIEW contained two interesting articles on business correspondence, and hope that they will evoke many useful contributions. Although the art—it has now attained that dignity—of business correspondence is largely in the formative stage, it is generally agreed that there are five leading qualities common to nearly all good business letters; and these I think might safely be regarded as the essential qualities. They have been called "The Five C's"—Clearness, Correctness, Conciseness, Courtesy, and Character. To deal with each of these fundamentals in any detail would require much more space than is at my disposal, so I will content myself by merely enumerating them.

It is not always easy to break away from the use of hackneyed expressions, but when a letter does show a departure from the stereotyped it has a much more pleasing effect on its recipient. Many such expressions will occur to the reader, "beg to acknowledge," "would say," "esteemed favor," "thanking you in anticipation," not forgetting the doubleheader, "inclosed herewith," etc. "Would say" lays itself open to particular criticism, because if the writer "would say" no one is preventing him from saying; he should go ahead and say what he wants to without the "would." Pages could be written on these topics, but I will refrain.

While possibly not strictly germane, there is one branch of the subject that could, I think, be referred to with advantage; that is, the addressing of envelopes to be sent by messenger service. While particularity is necessary when United States mail is used, brevity can safely be the keynote when our own messenger service is involved. Thousands of unnecessary words are used daily. Take as an instance the following:

Mr. John Doe,
Local Commercial Manager,
New York Telephone Co.,
1000 Somewhere Street,
Somewhere, N. J.

All that was necessary was:

L. C. M.,
Somewhere.

Twelve letters instead of something like sixty. When one considers that possibly all departments of the business err on the side of quite unnecessary detail the saving that could be effected by reducing the addressing to a minimum will be obvious.

If I may be pardoned for paraphrasing that extremely clever motto of ours, "The Voice With the Smile Wins"—"The Letter With the Five C's Wins."

MR. BELL'S advice is excellent and the pithy rule of the Five C's is a convenient reminder. The plea for variety in the second paragraph is particularly important, though many may disagree with Mr. Bell's illustrations on the ground that the elimination of such expressions is apt to show lack of courtesy. Again, other expressions used as substitutes would soon become as hackneyed as these; so the important point to remember is the pleasing effect, and the consequent necessity, of variety. "Inclosed herewith," it should also be noted, is not always considered a "doubleheader." The dictionary gives no definition of inclosed which includes the idea denoted by "herewith," so, unless the implication is recognized which the customary use of the word in this connection has given it, the "herewith" is not considered redundant. What do others of our readers think about it?

Some strong points are also made by "An Interested Reader." Let us put them into practice; when we have tried them out let us give the results of our experience and tell the other readers of the magazine what adaptations or further developments our practice has brought out.

Editor, THE TELEPHONE REVIEW:

I HAVE read with much interest the article "Notes on Business Correspondence" in a recent REVIEW. The subject is both timely and important and a thorough discussion of it should prove of value to your readers.

Aside from the important considerations of neatness, style, and courtesy, the questions of preparation and arrangement seem to me to be ones that are generally disregarded. How often have we noticed letters and reports which contain no order as to facts and to get the sense of which it is necessary to perform mental acrobatic feats. Again, in submitting reports, it is a frequent practice for each employee to repeat much of the matter already expressed before adding his thoughts to the case.

We should practice directness, order, and brevity within reasonable lines. The chief fault of many a writer is that he is not satisfied to express his thoughts in simple language. He has a fondness for large words and involved sentences, giving his energy principally to manner and letting his subject matter suffer in consequence. This is a practice that should be guarded against.

To acquire simplicity of style we must first aim at directness and simplicity of thought. Avoid pretentious words and all attempts at display of language. Know what we mean and say it in the fewest possible words that will say it well. We need not, however, carry conciseness to the point of being meager and abrupt, but should rather endeavor to express ourselves with reasonable precision and brevity. Remember that vagueness is often due to lack of knowledge of one's subject, and what is not clearly conceived cannot possibly be expressed clearly. Long and cumbersome sentences are no longer in favor and present day practice demands the short, crisp word, the pointed phrase, and the clear, direct sentence.

AN INTERESTED READER.

Jury Uses the Telephone

LONDON.—Justice Ridley, explaining to the jury in a murder trial at the Old Bailey that they would have to be kept in the Manchester Hotel all night, said he believed that the telephone, which was "a new invention," was permitted, but the jurors must not communicate by it with the outside public.

—*New York American.*

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Transcontinental Demonstrations

DEMONSTRATIONS of the Transcontinental Telephone Line have been described in several previous issues of THE TELEPHONE REVIEW, and our readers are therefore familiar with the details of the program, so it is unnecessary to describe in full the latest demonstrations, except where the proceedings differ materially from those already treated. Certain unique features give an added interest to the occasions described below.

Wayne Telephone Company Gives Demonstration at Newark, N. Y.

THE people of Newark, Wayne County, N. Y., were given abundant proof, on Wednesday, December 22, 1915, that the Transcontinental Telephone Line is not simply a means of bringing together the great cities of the Atlantic Seaboard and the city of the Golden Gate, but that every community connected with the Bell System may speak with its most distant neighbors even to the Pacific. A demonstration of transcontinental telephony was held on that date before the Newark Board of Trade, by the Wayne Telephone Company.

Mr. H. P. McDonough, vice-president and general manager of the telephone company, acted as host for the demonstration, and the program which he conducted was one of superlative interest to all of the two hundred or more who participated. Telephone receivers were arranged at every plate, and when the time came for the Transcontinental Line to be opened, and Mr. McDonough had called the roll of the wire chiefs along the line, a number of the prominent citizens of Wayne County conversed with newspaper men and friends in San Francisco.

Mr. Arthur N. Christy, president of the Newark Board of Trade, was the first to use the line. He spoke with a representative of the San Francisco Board of Trade. Dr. C. N. Davis, in the absence of Mr. Charles Hyman, village president, took his place in extending the greetings of Newark to the West. Mr. Charles H. Betts, editor of the Lyons *Republic*, and Mr. John DuBois, editor of the Newark *Union-Gazette*, talked with Mr. M. H. DeYoung, of the San Francisco *Chronicle*. Others who spoke across the continent, either with representatives of their various professions on the Pacific Coast or with personal friends with whom they were thus enabled to converse, were: Father James Gibbons, Senator S. W. Griffith, of Palmyra, Messrs. James Townsend, John W. Marder, S. N. Keener, W. P. Rogers, Fred Cowles, and Ralph Coykendall.

Not only by the transcontinental conversations, which were of great personal interest to the guests, but by further tests of the possibilities of the line, the wonderful transmission was demonstrated.

"Hello, 'Frisco" was sung from the Newark end of the line by Mr. Burgess, and the applause which greeted it in San Francisco was heard distinctly in Newark. From San Francisco came "The Little Gray Home in the West," by Alma Glück, and "Then You'll Remember Me," by Caruso, and although the voices came through the medium of both the victrola and 3,500 miles of telephone wire, they were nevertheless almost as clear and natural as if the singers had been in the room.

Not satisfied with demonstrating the transmission of the human voice both in singing and speaking, the telephone men let the guests hear the roar of the Pacific Ocean on the shores of California. The demonstration of the line itself closed with the playing of "The Star-Spangled Banner" in San Francisco.

The story of the Transcontinental Telephone Line and what it means, of the history that made it possible, and the men whose genius brought it to consummation, was told by Mr. W. F. Schmidt, who illustrated his talk by moving pictures of the building of the line.

Mr. John Truesdell, of the A. T. & T. Co., who had charge of the wire end of the demonstration, made a short speech. He was introduced as the man who had been managing the wires while the guests were using the line, and was greeted with enthusiastic applause.

The history of the invention and development of the telephone, and in particular the growth of the telephone service of Newark, were described by Mr. McDonough in an address of unusual interest. What it means to the telephone users of any community to be in connection with the wires of the Bell System was brought out by the speaker in describing the growth and improvement of the telephone facilities in Newark since the founding of the Wayne Telephone Company, which brought together the Bell Company with the original telephone company of the town; and again when Mr. McDonough said:

> I want to say a word for the great system to which the lines of the Wayne Company are connected. The Bell System is dedicated to the service of the American people; a service built entirely by American brains, American ingenuity, American initiative, and American scientific and technical skill and commercial daring. It is a system built along scientific principles that has called for an expenditure of $800,000,000, and still requires $50,000,000 annually to extend the system and to keep it fully prepared to meet the demands of the public.
>
> Now what does all this mean to the people of Newark? It means simply this—that as a result of this wonderful development of the art of telephony, Newark to-day has a telephone service that is the product of the best that has been devised anywhere in the telephone world. Its service is furnished by a system that on many occasions has rendered an account of its stewardship to the American people, and has received from that people that commendation which is always pleasant for a public service to hear—"Well done, good and faithful servant."

Mr. W. H. Kelley established the first telephone exchange in Newark in 1899, and so uncertain were the people of Newark, at that time, as to the practical value of the telephone, that the extent of the service was extremely limited and Mr. Kelley himself acted as manager, clerk, bookkeeper, and lineman. The early subscribers, of whom the Wayne County Milling Company was the first, numbered only forty at the time the first directory was printed. Experience overcame the skepticism of the public, however, and rapid growth soon set in. To-day there are 1,200 stations in Newark and the present switchboard capacity admits of growth up to 1,600 lines. When that point is reached a new switchboard will be required.

To place the telephone service at the disposal of citizens of Newark, forty people, of whom twelve are girl operators, are employed in Newark alone, while thousands, scattered all over the county, the State, and every State in the Union, are ready at any moment to serve the people of Newark along whatever telephone paths their business or pleasure may lead them, whether three miles or three thousand.

The audience was extremely enthusiastic over the whole program. The use of the Transcontinental Line was an experience of a lifetime and the two hundred or more prominent citizens of Newark and Wayne County, who were enabled to enjoy this demonstration of one of the greatest marvels of modern science, were heartily appreciative of the hospitality, so to speak, of the Wayne Telephone Company. As the Newark *Union-Gazette* stated, "It was the most remarkable demonstration of science ever witnessed in Newark."

The Wayne Telephone Company has

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shown the people of Wayne County in a manner which would convince the most doubtful county of Missouri the practical working value of the Transcontinental Telephone Line. It is not a "stunt," not "one of the advantages of the city," but a convenience accessible to every telephone user whose instrument is in connection with the Bell System.

Star Class Association

EIGHTY or more members of the Star Class Association gathered for a banquet at Mouquin's in New York on the evening of December 28 and, in spite of a blizzard raging in the vicinity of Winnemucca, Nev., were given the impressive experience of talking across the continent. This association is composed of officers and prominent members of the leading yacht clubs of Long Island Sound and lower New York Bay, among whom were present for the demonstration: Capt. Geo. A. Corry, president of the Star Class Association and commodore Port Washington, L. I., Yacht Club; Commander A. B. Frey, chief engineer of Federal Buildings, New York City; Mr. Wm. Gardiner, designer of the *Vanitie*, Port Washington, L. I.; Mr. W. F. Blaisdell, prominent coal merchant, New York City; Mr. Bernard Secton, author (nom-de-plume Grey Wolf), New York City; Mr. Edward Willis, Port Washington, amateur champion sailor of the world; Mr. Frank Wilson, vice-president of the Barber Steamship Company and vice-commodore of the Larchmont Yacht Club; Commodore Henderson, U. S. Navy; Mr. Chas. Hyde, of Hyde & Baxter Estates (political leader, Nassau County); Mr. Allan Walker, New York representative of U. S. Chamber of Commerce; Mr. C. G. Norris, author and playwright; Mr. Tracey Lewis, crack shot of the United States (son of the editor of the *Morning Telegraph*), and Mr. Adrian Iselin, Jr., 2d, New Rochelle, N. Y.

Tidal conditions on the Pacific made it impossible to transmit the "Roar of the Pacific Waves" on this occasion, but the situation was explained to the audience and the breakers on the Atlantic coast were heard instead, to lend realism to the moving pictures of the Pacific waves at the Cliff House.

At the close of the demonstration, Mr. Allan Walker, the New York representative of the United States Chamber of Commerce, expressed hearty appreciation for the demonstration and paid a glowing tribute to the broad vision of Mr. Theodore N. Vail, his progressive spirit, and wonderful ability as an organizer.

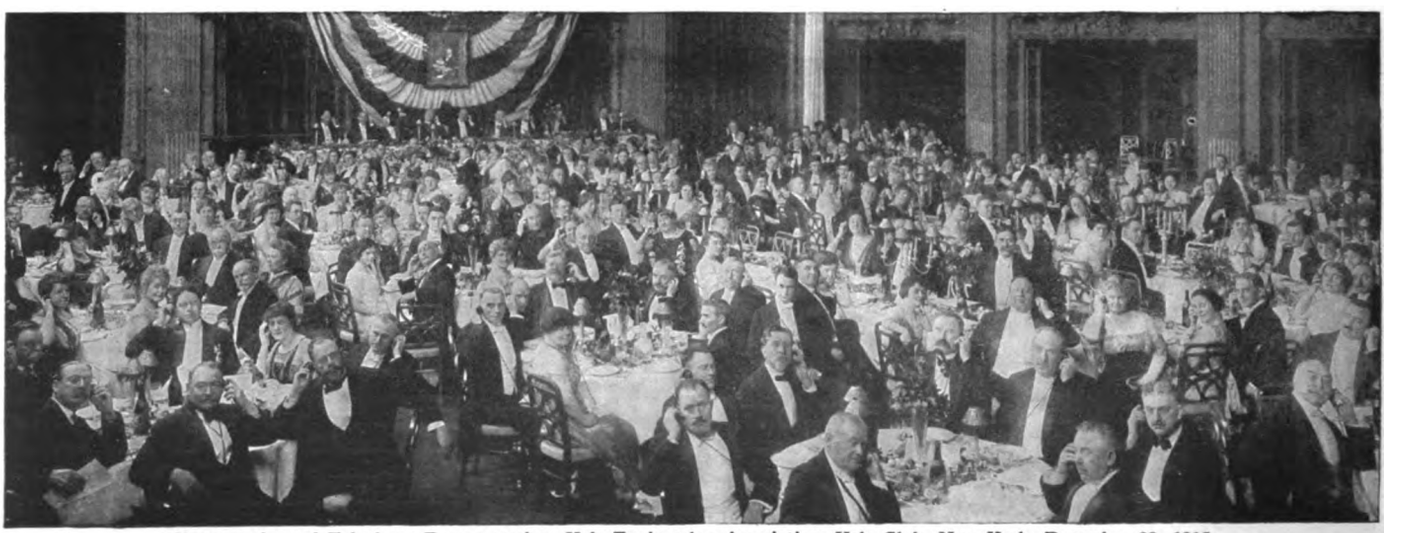
Yale Engineering Association

ON the day following, December 29, the Yale Engineering Association held its annual meeting at the Yale Club and the features of the affair were an address by Major-General Leonard D. Wood, U. S. Army, on the subject of "Preparedness," and a demonstration of the Transcontinental Telephone Line.

General Wood made a point which is of interest to every employee of the Bell System, when he emphasized the fact that preparedness means industrial as well as military readiness. The firing-line, General Wood said, is only a small part of war, and it is necessary that the industrial resources of the country be placed on such a basis that they could be utilized for purposes of defense in time of need.

Mr. Schmidt's talk on the Transcontinental Line followed the address on "Preparedness," and taking General Wood's point as his cue, Mr. Schmidt brought home to his audience something of what the universality of the Bell System would mean in a military crisis.

Miles of the Transcontinental Line had been demolished by a sleet storm which had swept the East on the very day of the demonstration, but it was explained to the audience that through the efforts of two Yale alumni, Mr. F. A. Stevenson, general plant superintendent, and Mr. H. S. Brooks, general commercial superintendent, of the A. T. & T. Co., hundreds of men had worked all day to restore the line, and they had succeeded just in time. Mr. H. W. Casler, division advertising manager, as master of ceremonies, explained this interesting drama to the 300 Yale men before him, and later, when it was found advisable to re-route the line through Boston to Chicago, in order to have the best transmission, this further complication was explained. The change had already been made, entirely without the knowledge of the audience, less than thirty seconds being required to make the messages go through Boston to Chicago, instead of by way of Buffalo.



Transcontinental Telephone Demonstration, Yale Engineering Association, Yale Club, New York, December 29, 1915

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The line between New York and Buffalo gave trouble about 10.20 P.M. because of the storm, but the expedient of routing the circuit through the Boston testboard was at once decided upon by the New York and Chicago wire chiefs. Mr. Truesdell, of the A. T. & T. Co., in charge of the control room at the Yale Club, informed Mr. Casler that the emergency circuit had been established by means of a four-way open-wire circuit from Boston to New York and a two-wire circuit from Boston to Chicago. The audience, when they were informed of how the conversations had been routed several hundred miles farther around without their knowing it, greeted the news with hearty applause.

This demonstration was a three-cornered affair, Yale graduates being assembled in San Francisco and Chicago as well as in New York. For the interest of the New York audience, the names and classes of the Yale men at Chicago and San Francisco were read. Greetings were exchanged by General Wood and Col. Swift, Chief of Staff at San Francisco; by Mr. E. M. Herr, president of the Yale Engineering Association, and Mr. Wm. H. Crocker, president of the Bank of California; Mr. Otto T. Bannard, president of the New Trust Co., and Mr. Samuel Knight, district attorney of San Francisco; Mr. W. Lowe, Mr. F. W. Beinecke, and Mr. S. M. Bradley and Mr. C. F. Mills, secretary Yale Alumni Association, San Francisco; by Mr. Lyndell T. Bates, attorney, and Mr. Willard N. Drown; Mr. W. W. Nichols, assistant chairman Allis-Chalmers Co., and Mr. Jas. Lyman, consulting engineer, Chicago; Mr. A. L. Webster, consulting engineer, and Mr. W. D. Allen, Chicago; by General Wood and General Campbell, San Francisco. Mr. Irwin Rew, engineer, Chicago, made a brief address to the Chicago, New York, and San Francisco audiences.

American Irish Historical Society

THE Transcontinental Line was brought into play when the American Irish Historical Society held its eighteenth annual dinner on January 8, to enable members of the society in San Francisco to participate in the festivities of the parent organization at the Waldorf-Astoria.

Dr. Thomas Addis Emmet, surgeon, teacher, patriot, and litterateur, recipient of the Laetare Medal and direct descendent of Robert Emmet, the Irish patriot, was the guest of honor, but injuries and illness due to a fall prevented Dr. Emmet, who is in his eighty-ninth year, from being present. Three hundred persons attended the dinner in New York, while a large gathering in San Francisco were also present, over the telephone, for much of the after-dinner program. At the speakers' table were: Mr. Clarence Winthrop Bowen, president of the New York Genealogical and Biographical Society; Hon. Marcus M. Marks, president of the Borough of Manhattan; Hon. James M. Curley, Mayor of Boston; Rev. John Cavanaugh, D.D., president of Notre Dame University, which awards the Laetare Medal; Messrs. W. F. Schmidt and H. J. Carroll, of the New York Telephone Company; Mr. Thomas Hobbs Maginnis, writer and poet, Philadelphia, and Prof. Arthur F. J. Remy, of Columbia.

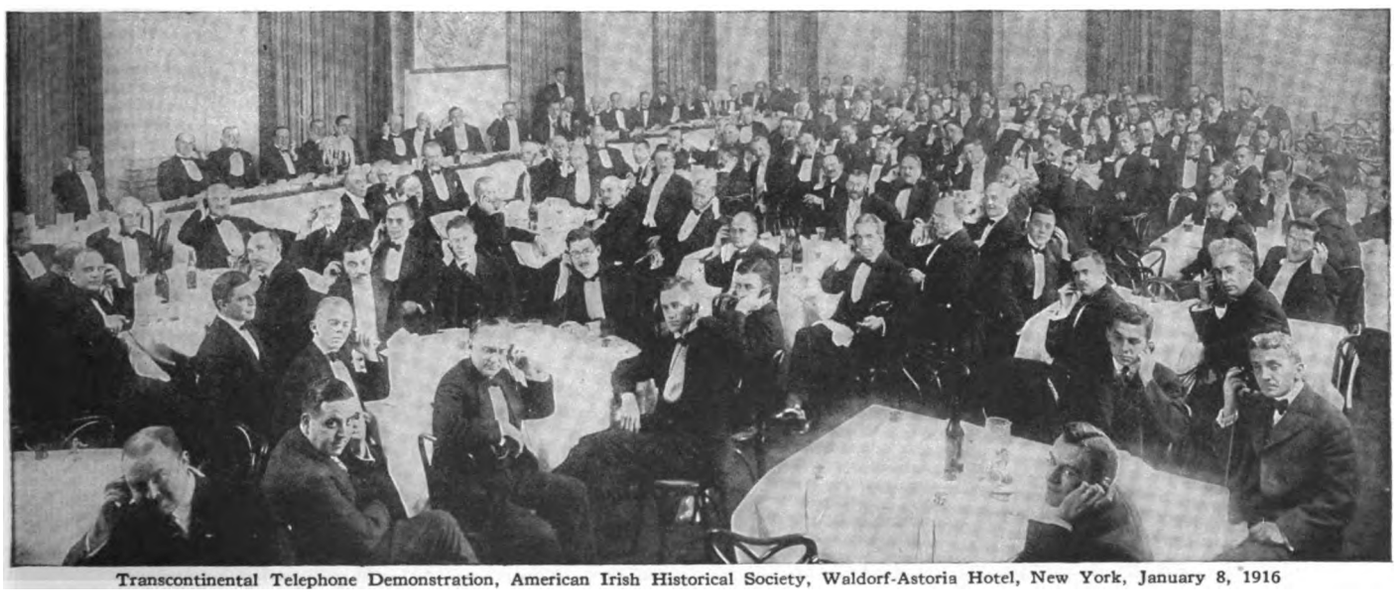
It had been the custom for telegrams to be exchanged at the annual dinners of this Society, but this year, as the president announced to the diners: "We shall be really and truly up-to-the-minute and have our San Francisco Chapter greet us and we them—by telephone, over the Transcontinental Telephone Line." President Clarke also expressed the pride felt by the Society in their fellow-member, Mr. J. J. Carty, whose genius had made possible the Transcontinental Line which they were about to use.

A speech of tribute to Dr. Emmet was made by Dr. Cavanaugh, and while this was in progress Mr. Truesdell, of the A. T. & T. Co., in charge of the local control room, advised Mr. Schmidt that the circuit had failed between Winnemucca and Salt Lake City, but that everything possible would be done to restore it in time. Mr. Schmidt encouraged the toastmaster to let Dr. Cavanaugh talk longer, and the address continued for eleven minutes. Then Mr. Carroll gave the talk on "The Triumph of Science—The Transcontinental Telephone Line," and the motion pictures taken along the line were shown. Just as this part of the program was drawing to a close, Mr. Truesdell gave the good word to Mr. Schmidt that although both circuits one and two had failed, a local circuit had been connected and the demonstration could proceed.

It was now time for Mr. Schmidt's remarks, and when he told the audience what had been transpiring during the last few minutes and referred to the spirit of service which had made possible the carrying through of the demonstration in spite of conditions, the applause was hearty and enthusiastic.

The conversations over the line were carried on as follows:

President-General J. I. C. Clarke greeted President Robert P. Troy, of the San Francisco Chapter; Secretary-General Edward H. Daly talked with Secretary John Mulhern, of the San Francisco Chapter; Mayor Curley, of Boston, renewed old friendships with Hon. Edward Rainey, secretary to Mayor Rolph, of San Francisco; Miss



Transcontinental Telephone Demonstration, American Irish Historical Society, Waldorf-Astoria Hotel, New York, January 8, 1916

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Anna Frances Levins, official photographer of the Society and founder of the American Society of the Daughters of Ireland, talked with Miss Hortense Gilmore, paying tribute to Dr. Emmet. Miss Gilmore sang an old Irish melody which evoked enthusiastic applause from the New York audience. Mr. Cavanaugh and Rev. T. J. Brennan indulged in good-natured banter across the continent; Professor Remy exchanged greetings with Jeremiah V. Coffey, probate judge of the superior court of California; Mr. Joseph Scott, in New York, who is considered one of the greatest orators of the Pacific Coast, talked with Mr. R. G. O'Connor, national vice-president of the American Irish Historical Society, who was in San Francisco.

At the close of the conversations Mr. Clarke suggested that for the benefit of the guests in San Francisco the Roar of the Atlantic instead of that of the Pacific be transmitted over the wires while the moving pictures of the Cliff House waves of the Pacific were being shown. Surely the Fairies and Little People who haunt the glens of Ireland had been flitting over the face of the earth and had whispered what they had seen to Mr. Clarke, for the transmitting apparatus at the Cliff House had been washed away by storm and high seas, and it would in fact have been impossible to transmit the roar of the Pacific waves.

Mr. Chauncey Olcott consented to sing his favorite solo, "My Wild Irish Rose," for the San Francisco audience, and the applause which came back over the line bespoke the delight and appreciation of the San Francisco Chapter.

Syracuse Honors Mayors—Transcontinental Line Assisting

THE first demonstration of the Transcontinental Telephone Line to be held in Syracuse took place on January 13, at the Onondaga, at a municipal dinner given by the Syracuse Chamber of Commerce in honor of Mayor Stone and ex-Mayor Will, of Syracuse. Four hundred and six prominent business men of the city secured places for the dinner, and over one hundred were turned away, unable to obtain accommodations.

Ex-Congressman John R. Clancy, acting as toastmaster, introduced Mayor Walter R. Stone, who spoke briefly on the outlook for prosperity in Syracuse during the coming year.

Mr. Clancy read a telegram from ex-Mayor Will, who was unable to be present at the dinner, but was represented by Mr. Giles H. Stilwell, who spoke of the administration of the former Mayor.

Mr. Edward F. Trefz, field secretary of the United States Chamber of Commerce, gave the address of the evening. He referred to the necessity of preparedness and to the union of interest of the business man and the State. "The wide chasm between the business man and the Government is closing and there is little distance between them to-day," said Mr. Trefz, and later, referring to the growing together of the country, he said, "To-night you will have as your immediate neighbors, through the wonderful Transcontinental Line, your friends in far-off California."

Mr. H. J. Carroll, special agent of the Advertising Department, then told of the building of the Transcontinental Line, displayed an exact reproduction of the first telephone instrument, and showed moving pictures taken along the line. At the close of Mr. Carroll's speech, Mr. Clancy rose and called upon the assemblage for three cheers for the Telephone Company, for Mr. D. C. Cox, division general manager, Central, who was master of ceremonies, and for Mr. Carroll. The audience accepted the suggestion with alacrity and three rousing cheers filled the banquet hall.

Mr. Cox then opened the line with the roll call of wire chiefs. Mr. Clancy was the first to speak, conversing with Vice-president Lynch, of the San Francisco Chamber of Commerce. Mr. Lynch spoke with Mr. Trefz, who was followed by Mayor Stone, speaking with Mr. Rainey, secretary to Mayor Rolph, of San Francisco.

These conversations were succeeded by exchange of greetings between: Mr. Walter B. Cherry, of Merrell & Soule Company, and Mr. Adams, of Kelley-Clarke Company, San Francisco; Mr. W. W. Nicholson, Commissioner of Public Safety, Syracuse, and the San Francisco Chief of Police; Mr. Thomas K. Smith and Mr. Auger, president of the San Francisco Rotary Club; Mr. D. C. Cox and Mr. J. C. Nowell, general manager of the Pacific Telephone and Telegraph Co.; Mr. Giles H. Stilwell, general counsel of the H. H. Franklin Automobile Co., and Mr. Boyer of the John F. McLain Co., San Francisco; Mr. Hurlburt W. Smith, of L. C. Smith Bros., Syracuse, and Mr. Alexander, San Francisco representative of the firm; Mr. Jerome D. Barnum, business manager of the Syracuse *Post-Standard*, and Mr. Nelson, president of the Advertising Association of San Francisco; Mr. E. H. O'Hara, editor of the Syracuse *Journal*, and Mr. Stephen H. Chapman, of San Francisco.

The series of transcontinental conversations was varied for a few minutes while Mr. Frank Weedon, secretary of the Rotary Club of Syracuse, sang a splendid imitation of Harry Lauder's rendition of "It's a Wee Deoch-an-Dorris," to which San Francisco responded with a victrola selection.

Schenectady Board of Trade

AT the annual dinner of the Board of Trade of Schenectady, N. Y., on January 19, the feature of the evening was the demonstration of the Transcontinental Telephone Line. Over six hundred guests gathered in the big gymnasium of Union College, where prominent men of the city, of the college, and of the General Electric Company, whose enormous plant is situated in Schenectady, took part in the program of transcontinental speaking.

Mr. Henry W. Peck, president of the Schenectady Board of Trade, made a short address of welcome, and a brief talk, "Intellectual Life as a Municipal Asset," was given by Dr. Charles Alexander Richmond, chancellor of Union University. Mr. G. A. Leimbach, special representative of the New York Telephone Company, gave the address on "The Triumph of Science—The Transcontinental Telephone Line," and Mr. F. M. Cozzens, local manager of the company at Schenectady, acted as master of ceremonies.

Those who talked over the Line were:

Mr. Henry W. Peck, president Schenectady Board of Trade and vice-president and general manager of the Mohawk Gas Company and of the Schenectady Illuminating Company; Hon. George R. Lunn, Mayor of Schenectady; Hon. James O. Carr, public service commissioner of New York State; Mr. Horace W. Raymond, secretary Schenectady Board of Trade; Dr. Charles Alexander Richmond, chancellor of Union University; Mr. Thomas Hannigan, chairman entertainment committee, Board of Trade; Mr. George E. Emmons, general manager General Electric Company's Schenectady works; Mr. Gerardus Smith, proprietor the Schenectady *Gazette*; Mr. I. C. Chamberlayne, assistant editor the *Union-Star*, Schenectady; Mr. John Weiderhold, manufacturer of underwear; Mr. N. I. Schermerhorn, banker.

The warmest admiration was displayed by the audience, and at the close of the program many of the guests gathered about the speakers' table to express in person their enthusiasm for the delightful and instructive evening they had enjoyed.

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Main Society

MR. L. H. KINNARD, vice-president of the Bell Telephone Company of Pennsylvania and Associated Companies, will be the speaker at the next meeting of the Telephone Society in New York, on Tuesday evening, February 15.

Let every member of the Society endeavor to be present to give Mr. Kinnard a royal welcome.

The subject of Mr. Kinnard's address will be announced in the usual way by notice to members, but this advance information is given hot off the griddle.

'Rah for the Telephone Society and Mr. Kinnard, its next speaker!

Hudson Section

AT the meeting of the Hudson Section in Albany, on Tuesday evening, January 18, Mr. R. S. Scarburgh, advertising manager, delivered a talk, illustrated by lantern slides, describing the Advertising Department of the New York Telephone Company.

Mr. Scarburgh showed how the Advertising Department's work is closely connected with the activities of the other departments of the Company. He stated that the Advertising Department consists of 115 people and that the work under the supervision of the Advertising Manager is divided into two classes, one, publicity and advertising, and the other, telephone directories. He described in detail how the department works with the local organizations of the Company.

There were about one hundred members present, and after the address there was a lively discussion in which many took part in true Hudson Division fashion.

Chapter Meetings

Chapter meetings in the Hudson Section, not previously reported, were held in Glens Falls on November 18 and December 16. At the November meeting Mr. W. N. Tongue, district plant chief clerk, read a paper on "The Object and Disposition of the Three Common Plant Routines." His paper dealt with the details of time reports, material tickets, and the contract order routine.

At the December meeting Mr. Walter R. G. Baker, of the Plant Department, Schenectady, spoke on "The Operation of the Subscriber's Set." Mr. Baker explained the construction and operation of the transmitter, receiver, condenser, induction coil, and the bells. The talk was illustrated with thirty-five stereopticon views, showing the wiring, conconstruction, and operation of the various pieces of the apparatus. Mr. Baker himself prepared the views that were thrown upon the screen.

Central Section

THE evening of January 18 will probably be long remembered by the many employees who attended the Central Section's "Traffic Night," held in the Assembly Hall of the James Exchange Building.

Except for the election of twenty-four new members into the Society, routine business was dispensed with.

The paper delivered by Mr. H. H. Kennedy, the speaker of the evening, concerning the work of the Information Operator and Special Operator was most interesting. It was delivered in such a way that a great many of the peculiar phases of Traffic work unknown to the average telephone employee were clearly explained.

Vocal and instrumental music furnished by the young women of the several departments followed, and the entertainment concluded with a supposed Transoceanic Wireless Telephone Conversation. In connection with this demonstration, such marvelous pieces of apparatus as a "Louis Frost Congealer" (an ice cream freezer), a "Melting Pot" (large blow torch), a special type of "Van Der Bogart telephone" (a telephone instrument standing about eight feet high, with a regular receiver equipped with a megaphone to increase the volume of the sound), and a "High Tension Converter" were introduced. Conversations with several foreign officials were carried on in their native tongue, and through the courtesy of two young women of the Traffic Department who understood French and German, their messages were translated.

At the close of the meeting, the Chairman announced that the plans for the annual banquet to be held during the month of February were under way and further details would be announced at an early date.

PROGRAM

1. Orchestra.....National Emblem March
2. Vocal Solo, "The Rosary"...Miss Potter
3. Address.....Mr. H. H. Kennedy
4. Orchestra.....Chin Chin
5. Vocal Solo, "A Little Bit of Heaven" M. Wood
   Encore, "If You Can't Get your Man on the Telephone."
6. Vocal Solo, "Dear Old Girl"..Miss Horner
7. Mandolin Duet....."Ragtime Strollers" Mrs. Murray, Miss Ross, Miss Daggett
8. Vocal Solo, "When I Leave the World Behind".....Miss Gravell
9. Song, "Hello, 'Frisco!" The Misses Gere and Demong
10. Transoceanic Demonstration.
11. Orchestra.....Jubilee, Kentucky Home

Welfare Committee

Organized by Plant Accounting Force

AT a meeting of the Plant Accounting Force, held December 6, a Welfare Committee was organized and the following officers were elected and sub-committees appointed:

Chairman, D. J. Sullivan.

Secretary-Treasurer, Miss O. M. Rose.

Health Committee	Athletic Committee
F. Dykeman	E. W. Sigler
C. E. Condit	J. F. Maguire
Miss L. Meusel	T. F. Flynn
Miss I. Kraft	C. E. Condit
Miss O. M. Rose	
Entertainment Committee	**Educational Committee**
J. F. Maguire	D. J. Sullivan
E. W. Sigler	F. Dykeman
T. F. Flynn	J. F. Maguire
Miss I. Kraft	Miss L. Meusel
Miss O. M. Rose	

The duties of the Welfare Committee are to provide for the Plant Accounting Force:

Regulation and control of Fire Drills.

Ventilation, light, lunch and rest rooms and other matters pertaining to office quarters and also regarding questionable conduct of office employees.

Monthly educational talks for the members of the Force on the evening of the first Tuesday following the twelfth of each month and advice to employees upon request, at any time, regarding Accounting schools and Accounting subjects in general.

Plant Accounting Night at the Telephone Club once a year, and for entries in various Club contests.

Plant Accounting entries in annual games of the Telephone Athletic Association.

Picnic and Outing of the Plant Accounting Force to be held during the month of June each year.

The Entertainment Committee has already started to work on the entertainment and dance to be given at the Telephone Club on the eve of Washington's Birthday, February 21 next, and cordially extends an invitation to all Departments.

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The TREND of REGULATION

By R. V. Marye, General Attorney

Foreign Attachments

THE Bell Telephone Company of Pennsylvania in its connecting agreements, inserts a provision to the effect that no equipment not approved by it shall be used by connecting lines. John F. Stickell and others, who had made such an agreement with the Bell Company, installed on their telephones a "knife switch," by means of which they could connect with the Cumberland Valley Telephone Company, a competitor of the Bell Company, whereupon the Bell Company, in pursuance of another provision of the connecting agreement, discontinued service to said persons, who thereupon complained to the Pennsylvania Commission, asking that service be reëstablished.

The Commission held that the condition requiring the Bell Company's approval of equipment was reasonable and that the Company was justified in discontinuing service if it was violated; that a telephone system must be considered as a whole; that every subscriber has a right to good service and is under the duty of keeping his telephone at the proper disposal of other patrons of the Company, and that anything that may interfere with or impair the service works an injury not only to the subscriber but to all desiring to communicate with him.

Boarding-houses

THE Public Service Commission of West Virginia, in passing upon the complaint of the town of South Buckhannon *vs.* Buckhannon Light and Water Company, held, among other things, that a person who merely takes into his house with his family one or two students as roomers and boarders should not be classed as running a boarding-house but was entitled to flat rates for residence service.

Commission Must Conserve Interests of Utility

THE People's Natural Gas Company of West Seneca having complained against the enforcement of certain rates fixed by its franchise ordinance, under which its business was unprofitable, the Public Service Commission of the Second District, New York, held, among other things, that it would be a denial of justice to permit or require a public utility to operate without profit and at considerable loss; that the Commission must conserve the interests of the utility quite as much as the rights of the public; that the utility and its customers have a mutual interest in the business and that good service by the company should be properly compensated by the customers, since a blow at either company or customers would work serious injury to the other. The Commission therefore held that the rate restrictions of the franchise were unfair and accordingly fixed rates which would, in its opinion, insure a fair return to the company upon the capital invested.

Right of Corporation to Do Insurance Business

THAT a corporation other than an insurance company may do an insurance business as an incident to its general business, if not contrary to the expressed terms of its incorporation, provided that such insurance is for the protection of its property, materials, works, machinery, plant, or employees, is established by the decision of the Supreme Court of Alabama in an action brought by the United States Cast Iron Pipe and Foundry Company *vs.* Bailey.

Renting Out of Instruments by Stockholders

THE Farmers' Mutual Telephone Company of Kennebec, South Dakota, furnished to its stockholders a telephone instrument and service in connection therewith for each share of stock owned, and permitted stockholders to rent such instruments to others and to pocket the rental. The Railroad Commission of South Dakota, in its investigation of the practices and rates charged by said telephone company and the Kennebec Telephone Company, states that this scheme and like schemes of finance will not be permitted; that the money so derived from the rental of telephones must be considered as a misappropriation of the funds of the company and should be accounted for to the company.

Valuation for Purpose of Taxation Should Be the Same as That for Rate Making

THE Public Utilities Commission of Idaho in Taylor *vs.* Northwest Light and Power Company *et al.*, in discussing the valuation of the company's property states, among other things, that when the valuation of the property of a public utility has been determined on a scientific plan for rate making, and a schedule of rates, based upon such valuation, fixed, the valuation for purposes of taxation should be practically the same since, if the property is assessed for taxes at an excessive value, the burden will eventually fall directly upon the customers of the utility.

Physical Connection

WILLIAM A. SHAFER, a subscriber of the Hamilton Home Telephone Company, residing near the city of Hamilton, O., complained that he could not connect with Cincinnati over the lines of said company because of the refusal of the Cincinnati and Suburban Bell Telephone Company to permit the use of its lines for that purpose, and asked the Ohio Commission to issue an order compelling the Cincinnati and Suburban Company to make physical connection between its lines and those of the Hamilton Home Company.

The Commission held that when the lines and facilities of one telephone company alone form a continuous and complete line of communication between different localities and are adequate and sufficient to supply all public demands of the locality involved, the Commission, under Section 66 of the Act of May 31, 1911, has no authority to require that physical connection be established with another company for the purpose of supplying additional service between said localities.

Lobby Service in Hotels

THE Public Utility Commission of Illinois, in Hotel Sherman Company *et al. vs.* Chicago Telephone Company, held that the furnishing of telephone service to the public by means of switchboards and other equipment installed by a telephone company in the lobby of a hotel, but controlled and operated by the hotel, was objectionable on the ground that it divided the responsibility for the service. The Commission states that divided responsibility is an evil that should be abolished, since when service is rendered entirely under the control of a telephone company, the company can be held responsible for the character and quality of the service, which is not the case where part of the operation and equipment is under the control of a person or corporation over which the Commission has no jurisdiction. The Commission further states that the practice of hotels of purchasing telephone service at wholesale rates and retailing it to the public at higher prices by means of such switchboards and other equipment in the hotel lobby, constitutes an unlawful discrimination against other pay stations and that, therefore, such practice must be discontinued.

Free Service to Municipalities

IN Farmington Chamber of Commerce *et al. vs.* Mountain States Telephone and Telegraph Company, the Corporation Commission of New Mexico held that a contract between a municipality and a telephone company, whereby free telephone service was to be furnished to the municipality, was not binding upon the Commission and that free service thereunder could not be compelled, and that a municipality should be treated like any other subscriber and be required to pay for any service received from any individual or corporation.

Exchange Units

IN passing upon the application of the Attica Telephone Company and the Shawnee Telephone Company for the establishment of joint toll rates between their exchanges, the Public Service Commission of Indiana points out that each telephone exchange and the lines operated by it in connection therewith constitute a unit for telephone service and that all subscribers of a local exchange should be permitted to interchange communications freely by paying a monthly rate. That messages between the subscribers of one exchange unit and another should be charged for on a message or toll basis, and, that since some subscribers may rarely use toll lines while others may frequently use them, it is discriminatory to charge each subscriber a flat rate per month for the use of toll lines regardless of the number of calls.

Keeping Account of Calls

THE Ostro Detective Bureau complained to the Public Service Commission of the Second District, New York, that the New York Telephone Company had charged it for a greater number of messages than had been sent from its telephone. The Commission held that the Company's system for counting calls was as nearly perfect as it probably can be; that the message registers of the Company are operated electrically and are much more accurate than the standard meters generally in use throughout the country for measuring gas and electric current, the percentage of error being considerably less than 1 per cent.; that, moreover, the Company's operators are carefully trained and it is therefore doubtful whether any appreciable number of errors in the operation of the message registers occurs, and that since numerous people had access to the complainant's telephone, some of them not in its employ, it was probable that any errors in the recording of messages were due principally to causes under the complainant's control rather than to mistakes of the Company's employees.

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NEW YORK TELEPHONE COMPANY

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H. F. THURBER, Vice-President
FORD HUNTINGTON, Vice-President
WALTER BROWN, Secretary & Treasurer
J. L. SWAYZE, General Counsel
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R. V. MARYE, General Attorney

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Collection Attorney

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Manager Public Telephones

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Supervisor of Methods

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Manhattan-Bronx & Westchester
BURCH FORAKER
Division Plant Supt.
24 Walker Street

Manhattan-Bronx
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321 Montgomery Street
Syracuse

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Buffalo

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P. O. JACOBS
Division Plant Supt.
Telephone Building
Buffalo

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J. J. WELCH
Division Supt. Traffic
Telephone Building
Buffalo

Western
H. W. GAUL
Division Auditor Receipts
Telephone Building
Buffalo

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We Are Prepared

Within the wide boundaries of our country, embracing more than three million square miles, dwell a hundred million people.

They live in cities, towns, villages, hamlets and remote farms. They are separated by broad rivers, rugged mountains and arid deserts.

The concerted action of this far-flung population is dependent upon a common understanding. Only by a quick, simple and unfailing means of intercommunication could our people be instantly united in any cause.

In its wonderful preparedness to inform its citizens of a national need, the United States stands alone and unequaled. It can command the entire Bell Telephone System, which completely covers our country with its network of wires.

This marvelous system is the result of keen foresight and persistent effort on the part of telephone specialists, who have endeavored from the first to provide a means of communication embracing our whole country, connecting every state and every community, to its last individual unit.

The Bell System is a distinctly American achievement, made by Americans for Americans, and its like is not to be found in all the world.

Through it, our entire population may be promptly organized for united action in any national movement, whether it be for peace, prosperity, philanthropy or armed protection.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

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VOL. 7, NO. 3 MARCH, 1916

The TELEPHONE REVIEW

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THE longer I live, the more I am certain that the great difference between men, between the feeble and the powerful, the great and the insignificant, is energy, invincible determination. A purpose once fixed, then death or victory. That quality which will do anything that can be done in the world.

BUXTON.

A GREAT effort may be made in a moment of excitement; but continual little efforts can only be made on principle. GOULBURN.

I DO not know that there is anything, except it be humility, which is so valuable as an incident of education as accuracy. And accuracy can be taught. Direct lies told to the world are as dust in the balance when weighed against the falsehoods of inaccuracy. These are the fatal things, and they are all-pervading. I scarcely care what is taught to the young if it will but implant in them the habit of accuracy. ARTHUR HELPS.

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The TELEPHONE REVIEW

New York March 1916

VOLUME 7 NUMBER 3

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

Published monthly by the New York Telephone Company. U. N. BETHELL, President; WALTER BROWN, Secretary and Treasurer. Publication Office and Principal Place of Business, 15 Dey Street, New York.

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VOL. VII. MARCH, 1916 No. 3

The Supervisor's Profession

THE Supervisor's profession is one in which the experienced operator may, upon her promotion, find full scope for a great variety of activities along lines peculiarly womanly.

This is largely true of operating, but liberty of action within the limits of the operators' duties is confined to her relations with the office staff, on the one hand, and to actually performing the service which the subscribers' needs require, on the other, and must be more or less according to established and invariable rules. These rules, it is true, replace the independent action of individual operators with uniform action by all, and to this extent are restrictive, but they are the necessary means of giving good telephone service.

This uniformity creates habits that become like second nature, leaving each operator free to express her personality in her own way. Thus the operator becomes a sentient force instead of being inanimate mechanism.

The operator's duties call for no mere mechanical service; she does not simply operate her switchboard. That part of her work must be performed so speedily and unobtrusively that subscribers will have no cause so much as to think about how it is done; in addition to this, she is the responsive agent and executor for her subscribers in ordinary and extraordinary occasions when they may have to call upon her.

This may be illustrated in many ways, for example:

One subscriber calls another and the operator knows that she is equally responsible to both of them for the service they get. Neither of them is concerned with the means she employs, but both of them at once become affected by any lack of precision or thoroughness on her part. She must, therefore, take into her own hands the carrying out of the calling subscriber's wishes, and if there is an emergency involved, she must accomplish for the subscriber what he desires. This is also true in so far as it affects the called subscriber.

Given a staff of such highly trained and intelligent operators as are found in our central offices, the duties of a supervisor require abilities which are sufficiently rare for her work to possess a charm that appeals to the most ambitious. There is less of inspection, criticism, instruction, and even of managing, than of leadership. Without omitting any of these things when occasion requires, the supervisor looks beyond the switchboard, and, seeing the purpose for which she and the operators are there, she guides her division in the responsive and intelligent service that does more than connect circuits of copper wire for talking purposes.

It is in this relation that the supervisor finds superlative opportunity for the exercise of the qualities which most adorn women. Sympathy, in the sense of sharing the interests of her operators and their subscribers; tact, in the sense of keeping in perfect adjustment and avoiding friction among the operators and with the subscribers; kindliness, in brightening the frame of mind of the operators as they go about their work; intuition, which senses instinctively the hows and whys that are inexplainable; gentleness, refinement, order, all these and innumerable other traits that we respect and admire in women are called into action.

Mr. Turner's article on "The Supervisor's Profession" in this issue is a presentation of the duties and opportunities of the supervisor. It has been delivered as a lecture before classes of supervisors throughout our territory, and is here printed for the first time.

Friends and Fellow-Workers

IN speaking of the atmosphere which should characterize our central offices—one of the points that Mr. Turner discusses in his article—it has been noted that the highest tone exists hand in hand with the greatest personal friendliness among the individual operators.

It is perfectly natural that friends should work together with more enjoyment than strangers, and in proportion as work is enjoyable, both the work and the workers benefit, whatever the department may be.

In filling positions, it is perfectly natural, too, that the Company should give the preference to friends recommended by its employees, provided they meet the requirements of the positions for which they apply. Very often employees will recommend friends purely out of friendship regardless of their qualifications. Such action does credit to their heart, but not to their head, and it must not be forgotten that the Company is a friend, too.

Then let us all select from among our friends those who are qualified to fill positions with the Company, realizing that to secure them such a position will be conferring a favor upon them, while at the same time adding to the number of our friends among our fellow-workers, and also helping the Company fill its vacancies with people who are as good, or better, than we are.

The Trend of Regulation

THERE are a number of cases cited in the department Trend of Regulation which employees having direct dealings with the public will find of great value. Take the first one this month, for example. It provides an authoritative answer to the fortunately infrequent, but nevertheless occasionally insistent repetition of the old fallacy that "competition is the life of trade"; as if modern business had not caught up with the fact that it is coöperation and not competition; that competition may send the prices of things upward as well as downward, as everybody knows, and

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that since telephone rates are now fixed by commission, the interests of both the public and the Company are protected instead of both being jeopardized.

Or take the last decision quoted in this department last month, which deals with the question of keeping account of subscribers' calls. Many employees themselves do not know that, to quote, "the Company's system for counting calls was as nearly perfect as it probably can be," etc., and "it is therefore doubtful whether any appreciable number of errors in the operation of the message registers occurs," etc. This decision is full of information as well as interest.

We bespeak for this department, which is a regular feature of our magazine, a careful and thoughtful reading each month, as it embodies in condensed form matter of the most vital importance.

Fire and Police and The Telephone

FOLLOWING a big fire in Glen Cove, L. I., the Board of Fire Commissioners of that town inserted the following advertisement in the *Glen Cove Echo:*

PUBLIC NOTICE

With reference to the question of Telephone Service following the sounding of the Fire Alarm, the public and users of the telephone system, generally, are hereby requested by the Board of Fire Commissioners to comply with the ruling as stated below, following an agreement entered into by the Telephone Company and your Board of Fire Commissioners, as follows:—

Do Not—Phone for information as to the location of a fire through a spirit of curiosity only, as hundreds of calls made approximately at one time does demoralize the system. Kindly reserve the use of the phone to the individuals and officials directly concerned.

Do Not—Ask "Central" to tell you where the fire is—rather, ask for No. 366 Glen Cove or No. 280 Glen Cove and "Central" will connect you with either number as speedily as the service will allow.

The above Phones are located in the two Fire Houses and each will be operated by an active fireman assigned to that duty during the period of the fire, for the purpose of giving the desired information to the public. The Telephone Company has agreed to directly connect such calls with the above phones for the purpose of conveying this information only.

Kindly post the above numbers in a conspicuous place near your phone, as also the *Fire Alarm Call, No. 600 Glen Cove.*

Study the system so as not to confuse the above members.

We feel that compliance with the above timely suggestions will do much toward improving the present condition, in that the tendency to cripple the Telephone Service and to handicap the Fire Department System, will be greatly offset.

Kindly do YOUR part with reason and thereby coöperate with your

BOARD OF FIRE COMMISSIONERS.

The idea was immediately taken up by other towns, which have followed the same method of directing the attention of the public to the matter.

The Chief of Police of Englewood also introduced an innovation by inserting the following advertisement in the Englewood *Press:*

THE
TELEPHONE
IS
YOUR WEAPON

The telephone has prevented more crime and helped to arrest more criminals than all the six-shooters in the world.

It isn't your business to undertake the arrest of a burglar—that is up to the police.

But it is most emphatically your business to notify the police station promptly whenever you see or hear anything which arouses your suspicions. This applies not only to your own house, but to your neighbor's.

A light in your neighbor's house which you thought unoccupied, may mean a burglary is in progress. A suspicious looking person lurking about your neighbor's yard may mean that a burglary is being contemplated.

Be suspicious. Telephone *first.* You may be wrong, but again you may be the means of preventing a crime or arresting a criminal.

JOHN J. PYE, *Chief of Police.*
Phone Englewood 104.

Other towns have likewise followed this example, the Chief of Police of Westfield varying it slightly by printing the notice in the form of a circular and distributing copies throughout the town.

From the Panama-Pacific Exposition

IN response to the message from Mr. Vail to the management of the Panama-Pacific Exposition, which we printed on page 2 of our January issue, Hon. Charles C. Moore, President of the Exposition, sent the following letter to Mr. Vail on December 7:

OFFICE OF THE PRESIDENT
THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO, CAL., U. S. A.
December 7, 1915.

Mr. Theodore N. Vail, President, American Telephone and Telegraph Company, 15 Dey street, New York City.

MY DEAR MR. VAIL: Accept our thanks for your very prompt and generous response to our request for participation in the closing-day exercises. Mr. Peck delivered the copy of the sentiment which was telephoned by Mr. Kingsbury. To telephone your expression of regard for the Exposition was most appropriate. Of course the telephone should have carried your message.

Then within the week there came the engrossed copy, which will be a treasured reminder of the relations which have existed between your Company and the Exposition management from the first. It is our plan to preserve the collection of sentiments in the archives of the Exposition, and we hope to publish them in book form. Be assured we are deeply grateful for your share in this collection.

December 4 was a wonderful day. The people came, 459,022 of them. Under a cloudless sky—a summer's day—warmed by a genial California sun, the multitude heard President Wilson's toast. It was inspiring to know that this toast was at the moment being proposed around the globe. We had the assurance that you and thousands of other friends were with us in thought and spirit. The day was, in very truth, a world event. We here in California, in San Francisco, were but having a share in a program which marked the conclusion of an international undertaking.

The gates are closed. The Panama-Pacific International Exposition belongs to history. Its inspiration and its influence shall go forward. Your own interest and assistance have helped to make this possible.

By this mail we are sending under personal cover a booklet giving a brief account of the ceremonies of closing day. Again our gratitude, feebly but earnestly expressed.

Very truly yours.
(Signed) CHAS. C. MOORE, *President.*

Erratum

THE name of Miss Frances S. Speich, who as acting night chief operator of the North exchange, Buffalo, saved the lives of four subscribers by summoning physicians and an ambulance to the house where they were dying of asphyxiation, appeared erroneously in the February issue of THE TELEPHONE REVIEW as Miss Florence Speich. It is with pleasure that THE TELEPHONE REVIEW takes the earliest opportunity to correct this mistake and make clear the name of one to whom four citizens of Buffalo owe their lives and all the employees of our Company an inspiration—Miss Frances S. Speich.—EDITOR.

Organization Changes

Plant Department

W. F. Judson, general agent, transferred to the General Counsel's office.

Nelson Goodsell will, in addition to his present duties, take up the work Mr. Judson formerly carried on.

New Jersey Division

Wilbur A. Cobb, engineer, deceased.

Robert L. Radcliff, formerly supervising line foreman, appointed district construction foreman, Elizabeth Sub District.

Jerome A. Rappleyea, Jr., formerly supervising instrument installation foreman, appointed district installation foreman, Elizabeth Sub District.

Charles Rinker, formerly supervising instrument installation foreman, appointed district installation foreman, Newark District.

Lloyd A. Good, formerly supervising C. O. equipment installation foreman, appointed district installation foreman, Newark District.

Central Division

F. J. Widman, wire chief, Owego, transferred to Norwich as wire chief, vice C. W. Reams, resigned.

F. E. Drake, inside man, Elmira, appointed wire chief, Owego.

"The Voice With the Smile" (Loses)

IN the Plant Department, Manhattan and Bronx, there is one gentleman named C. W. Raine, and another, W. L. Hale. One day during the absence of Mr. Raine, and as Mr. Hale was passing Mr. Raine's desk, the telephone bell rang. Mr. Hale, acting in accordance with "Answer your telephone promptly," picked up the receiver and with smiling voice said, "Mr. Raine's wire, Hale speaking." From the other end of the wire came a voice with a faint smile saying "What's that?" Again Mr. Hale smilingly repeated his previous announcement, only to be greeted with "What the —— you trying to do, kid me?" Bang! Smile all gone.

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THE work of the supervisor is of the utmost importance in the affairs of the central office, and the Traffic Department has emphasized this fact by the institution of special courses for supervisors at the Operators' Schools. What follows is the substance of a general talk to the supervisors given at these special courses.

IT is obvious that the great importance of the supervisor's work should never be lost sight of, when one considers, first, that it is the supervising force upon which we draw for our chief operators; second, that the supervisors take up the work of training and developing (molding) the new operators where the Operators' Schools drop it; and third, that the supervising force forms the connecting link between the administrative force of the department on the one hand, and the operating force on the other, being itself partly of the one and partly of the other.

This special course has presented a means of getting the supervisors away from the viewpoint of their own central offices only, and of giving them an opportunity for considering their many problems from a broad, "headquarters" viewpoint. As a result, their work has taken on a bigger and broader meaning for them, and they find that the only intelligent way of doing things is—not just because they have always done them, or because they have been told to do them—but because, through making a thorough study of whatever is concerned, they have learned the reasons in back of whatever rules or instructions may be involved. Consequently, they have a broader knowledge of what they are undertaking, and greater confidence in their methods of proceeding.

The establishment of this course at the school is a recognition of the fact that special and thorough training for the supervisors is necessary, in addition to operating experience and natural qualifications for the work, in order that they may attain the proficiency required for a profession of such a high order.

A Profession

THE supervisors themselves should have this conception of their work in order that it may be given the earnest thought and attention it deserves and that it may be taken up with enthusiasm.

Supervisors are in very lively competition with each other, as is the case in other professions, and this is something that should never be lost sight of. But keen as this competition is, it should always have the form of *friendly* rivalry; for supervisors and others cannot afford

Set the Fashion in Smiling Faces.

to sacrifice the benefits that come from the friendly relations which exist among them.

The splendid results springing from friendly rivalry may be seen, though in a less personal aspect, in the rivalry among the various divisions, districts, and central offices of the department.

The principal respect in which the supervisor's profession differs from many others, is that the value of her services depends largely on the work of *other* people; and it is this feature that makes her work particularly interesting. In this connection, her chief problem is to get these other people—her operators—to operate her division in the best possible way.

Several years ago at a meeting of the Telephone Society of New York, Mr. U. N. Bethell, in speaking of his work and associations with Mr. Theo. N. Vail, stated facetiously that he knew of no man who was so successful in "getting other people to do his work." One might venture to suggest that this is not the least of the reasons for Mr. Vail's remarkable success, and to point out to the supervisors that there is a lesson in this for them.

Leadership

WHAT control has a supervisor over those working for her? Here we have a parallel between the supervisor's nine or ten operators and her ten fingers. All day long these fingers are doing her bidding, the while she is practically unconscious of it. Everything they do seems to "just happen." That is an example of perfect control, such as the supervisor cannot hope to have over her operators, for they are separate personalities, each one different from the others and having her own peculiarities. But the supervisor can, through her knowledge of each of her operators and her skill in dealing with them, establish such a sympathetic relationship between them and herself that she makes them part of her operating self, just as her fingers are part of her physical self.

From all this it seems clear that with the supervisor's great importance there goes a very grave responsibility. She is responsible not only for the service rendered by her division, but also, and to a large extent, for the success or failure of each and every one of her operators.

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This responsibility is not such as to make the supervisor's position unpleasant, by any means, but the full realization of it should cause her to strive most earnestly for administrative success.

The secret of such success is found in *leadership*. The supervisor will not find it in merely "helping" her operators nor in driving or "bossing" them. In the one case she would be not much more than an extra operator in her division and in the other, a disliked "taskmaster"—in neither case getting anything more than mediocre results. But in leadership she finds her real function.

Public Service

AS the New York Telephone Company is a public service corporation, the supervisor should have a very clear understanding of what is comprehended in the term "public service."

It is apparent from the instructions issued by this Company that it is the Company's desire to have its service such as will at all times hold the friendship and good-will of the public.

But what constitutes any kind of *service?*

Service seems to be made up of two parts: First, the article, or its equivalent, which is given to the purchaser in exchange for his payment; and, second, all the attention and consideration that can be shown the purchaser, both in connection with his purchase and for the purpose of gaining and holding his friendship and patronage. Everywhere there is evidence that this second part of service, the friend-making part, is being given greater prominence in the business world of to-day; and this is so simply because it has been found necessary to adopt the most effective methods of appealing to human nature.

It is true that telephone service is contracted for, and the subscriber is billed for it, in terms of messages or calls—so many of them (800, 1,000, 10,000, or an unlimited number) for so much. But it must not be assumed that all obligation is therefore fully discharged when the number of connections contracted for have been given.

Personal Touch

THE Telephone Company, like all large companies engaged in public service, must make its appeal to the human nature of its patrons almost entirely through the *personal touch* given to the service by its employees.

In the Traffic Department the opportunities with respect to this second part of the Company's service are restricted, because the work in the central offices is largely confined to routine handling of calls, and because the central office forces are not visible to the patrons. Just imagine how strange it would be to be waited upon by someone shut up in a box entirely out of sight!

On the other hand, of course, her subscribers are equally invisible to the operator, and in order to give them the personal service that pleases and satisfies, she must visualize them.

The operator's problem, therefore, is how to reach out to those far-away subscribers of hers and let them feel the personal touch of her sympathetic service;

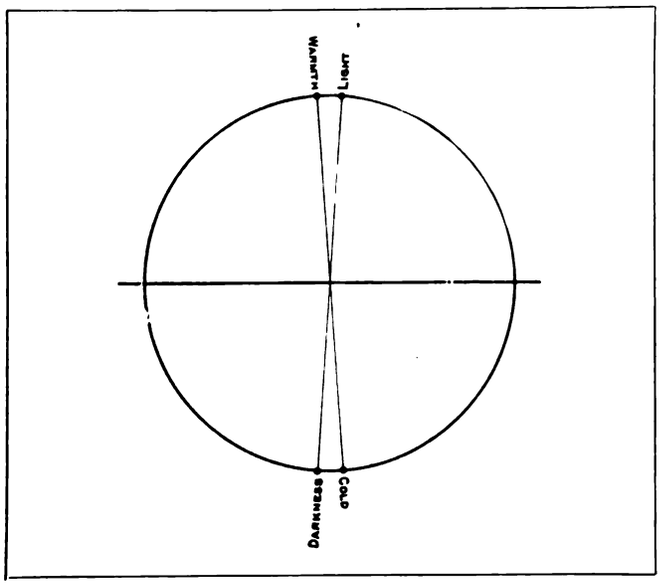

Diagram I.

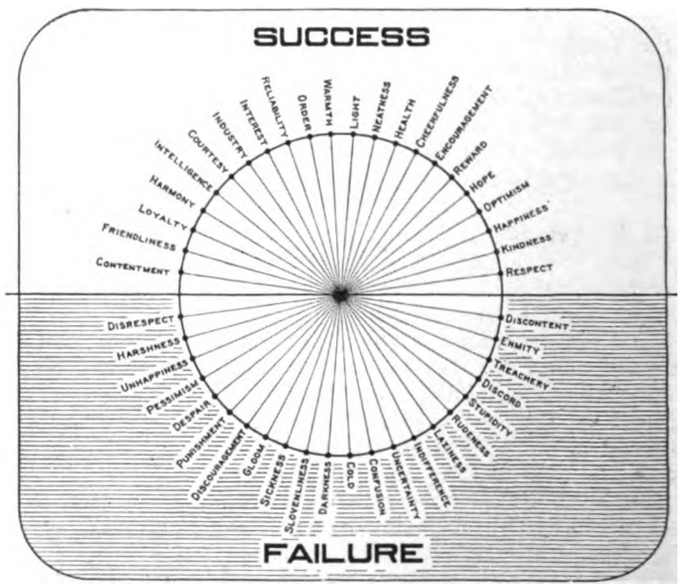

Diagram II.

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and the only means she has of doing so is her manner and "tone of voice" in conversing with them. Voice expression is a subject which would require too much space to be fully discussed here.* Suffice it to say that the operating forces that have been most successful in *pleasing* their subscribers and enjoying friendly relations with them are those that have specialized enthusiastically in this whole matter of personal touch and tone of voice. *Courtesy* has been given an important part in their service and voice expression has been their means of showing it.

It is by means of voice expression that through our great system of millions of telephones there may be distributed, as from an enormous reservoir, that cheerfulness, willingness, refinement, and personal interest, which will go so far toward brightening and bettering the affairs of all our patrons, and which will make our telephone operators the most respected and reverenced of all public servants.

How popular has become the Company's widely circulated motto, "The Voice With the Smile Wins!" And yet how little those words mean, where voice expression is lacking!

I am reminded of something I once read in a published interview with Hazel Dawn, the popular young actress of "The Pink Lady" fame. In speaking of her audiences she said, "It's just like looking into a mirror. I smile and the public smiles back." Isn't it the same with the telephone? "Smile into the telephone and the whole world will smile back." Remember, however, that when telephoning one must let her winsome smiles be *heard!*

The Feeling of Loyalty, Pride and Enthusiasm of the Officer and the Soldier

The great power of expression is strikingly illustrated in moving pictures. Anyone who is familiar with the wonderful appeal of these pictures, and has been moved by their voiceless eloquence, can understand that in their case a great deal depends upon expression. With them, everything is seen—nothing is heard. With telephone service, everything is heard—nothing is seen. Although the conditions are reversed, the principle is the same: *complete understanding and satisfaction come only with suitable expression.*

What is it that is lacking in a stupid face? What is there about a doll's face that shows the most casual observer that it is only a dummy—that it is not alive? Just as expression is everything to the face, frequently causing the plainest to light up and become wholly charming, so it is to the voice, especially where the voice *alone* must convey the speaker's full meaning.

The Human Element

MANY who are not familiar with central office work, as well as some who are, may not have realized that there are few lines of administrative activity in which the *human element* is so predominant a factor. It exists in the very close and constant relationship between the operators and the subscribers who are swayed by all kinds of human emotions; it is found in the team-work among the operators, all of whom must work together as harmoniously as the parts of a perfectly running machine, but with intelligence and coöperation of the highest order; but the human element is present chiefly in the relationship between the supervisors and their operators, which must be most sympathetic and responsive. Thus through the power and influence of her inspiring personality the supervisor leads her operators in performing the service which is most satisfactory and pleasing to the subscribers, just as the leader of an orchestra conducts a masterpiece. Every instrument is in tune and every musician knows his part, but it is the conductor's knowledge and skill exerted upon his players, which controls and directs them in the interpreting and rendering of a production. His greater ability they recognize, and indeed it is his *will* that they follow, and his spirit that fires them. It is such a relation toward her operators that the supervisor occupies.

Nothing Is Accomplished by Shooting Off a Gun Blindly

Where the human element plays such a part, results must depend very largely upon two features of the central office organization—the atmosphere of the central office, and the spirit of the operating force. They are intimately related, but can be discussed separately.

* For an article on this subject, see "The Art of Expression as Applied to the Work of the Telephone Operator" in the October-November, 1911, number of THE TELEPHONE REVIEW.

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The Atmosphere of the Central Office

A METHOD of presenting this subject, which is interesting as well as effective, is to "picture" it by means of a diagram showing some of the many elements composing the atmosphere of the central office, and their opposites.

This diagram should help the supervisors to get a clear mental picture of the make-up of the atmosphere of their offices, and a realization of just how it is affected by the methods and attitude they employ in their work.

First, a circle is drawn and halved (see Diagram I) and two diameters are drawn in, their extremes representing opposite conditions. The upper ends may be called "Light" and "Warmth," signifying the conditions out of which good operating is obtained, and the lower ends "Darkness" and "Cold," signifying the contrary.

Part of the duty of the supervisors is to maintain the conditions under which only good operating is possible. Every departure from such conditions reduces the operating efficiency and, if not corrected, results in failure.

To illustrate this, more diameters are drawn in the circle (see Diagram II) and their extremities named to denote other contrasting qualities. Thus it will be seen that in the diagram, "Neatness" in the upper half becomes "Slovenliness" in the lower half; "Order" becomes "Confusion"; "Health" becomes "Sickness"; "Reliability" becomes "Uncertainty," and so on. All the elements found in the upper half of the diagram are characteristics of Success in a central office, and all the elements found in the lower half are characteristics of Failure. As the lines leave the circumference of the circle they approach the center, where they radiate toward the other extreme. The light and shaded portions of the diagram represent the central office atmosphere created by the predominance of the personal characteristics indicated.

One of the supervisor's most important faculties is the ability to deal with her operators, when criticizing their work, so that there will still be an air of cheerfulness, encouragement, interest, and happiness in her division. Encouragement is one of the most effective stimulants, and as for happiness, its presence is essential in the atmosphere of the really successful office; for employment in central offices must be pleasant for the operators if the subscribers are to be pleased with the service, and there must be smiling faces in the offices if the subscribers are to be impressed with smiling voices. Cannot the supervisors, and also the chief operators, set the fashion in smiling faces?

Visualizing Her Subscribers, and Giving Her Work the Personal Quality That Pleases and Satisfies

Optimism

ANOTHER element, optimism, counts for a great deal in the supervisor's work, largely because of its influence over other people. Mr. Ralph Waldo Trine, the author, refers to this influence in comparing an optimist with a pessimist. "Each is building his world from within," he says, "and the result of the building is determined by the point of view of each. The optimist, by his superior wisdom and insight, is making his own heaven, and in the degree that he makes his own heaven is he helping to make one for all the world besides. The pessimist, by virtue of his limitations, is making his own hell, and in the degree that he makes his own hell he is helping to make one for all mankind."

A more homely description of an optimist is, "One who makes the most delicious lemonade out of all the lemons that come his way." Imagine a pessimistic chief operator or supervisor making anything helpful or interesting out of a set of operating rules!

Much might be said about all of the elements shown in the diagram, but the picture by itself seems to tell the whole story without further comment. Every central office has its atmosphere, which is the product of the elements that enter into it. The good elements which make up a central office atmosphere may vary in degree without changing their character, but the effect of their opposites is to contaminate and vitiate, and they must therefore be kept out. The farther away from the danger line, the purer and better is the atmosphere and the more successful is the central office.

Responsibility for the atmosphere of the central office rests upon the chief operator and the supervisors, and if they are wise they will repeatedly "stop, look, and listen," in other words, *sense* the

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atmosphere of their office to see if there is anything wrong with it. This is one of the most vital phases of their work.

Discipline

IT has already been said that the secret of successful supervision lies in leadership—not in merely helping or in driving. Where there is merely helping there will be a spirit of dependence, helplessness, confusion. Where there is driving there will be a spirit of dejection, resentment, antagonism. Discipline is essential, but should not be regarded as a necessary evil which must be tolerated, nor should it be enforced in such a way as to be misunderstood and create a feeling of dissatisfaction.

Discipline is not included among the elements shown in the picture of the central office atmosphere, but good discipline is the "tie that binds" in effectiveness the good elements in an office, of which the personality and leadership of the chief operator and supervisors are the inspiration and model.

The atmosphere of an office goes hand in hand with the quality of discipline maintained; it reveals whether there is a natural, healthy discipline, which meets with spontaneous response, or the reverse, which produces no more than a spiritless compliance with orders.

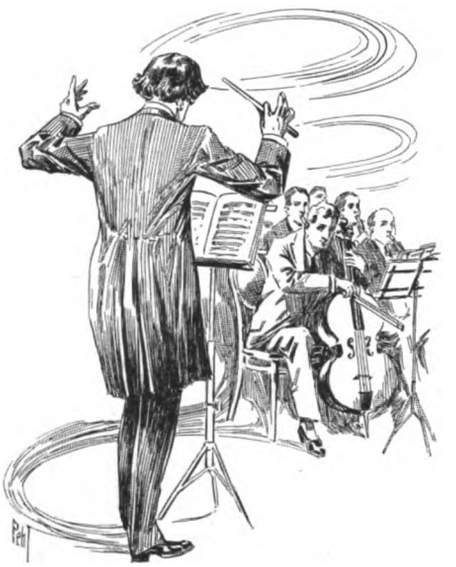
I once heard a very fine sermon in which the preacher pointed out that the word "yoke" as used in his text was often misunderstood, and was commonly applied to something burdensome, something that had to be borne up under, whereas it was in reality the name of a contrivance which *assisted* in the performance of work, thereby making the work much easier.

So it is in our work. Our discipline is too often looked upon as a burden under which we are all heavily toiling, whereas it is in reality the great yoke which makes effective the organization, rules, and regulations for the guidance of employees, and by means of which the individuals in the vast army of Bell employees are linked together in rendering a great public service.

Spirit of Service

Instead of worrying about discipline, however, why not take our cue from the very business in which the Company is engaged—*service?* Let our motto be, "To serve," and from it will come just the kind of spirit that is needed, the *spirit of service.*

Already there certainly is a splendid spirit actuating all the employees of our Company. It is manifested in the magnificent response that is made in emergencies, such as big storms, floods, and fires. A picture has been drawn of such an instance of emergency spirit. It represents the Montclair Night Chief Operator who was visiting in Verona when the March, 1914, blizzard began to rage. Realizing that the Company might need her in serving the public, she started for the office, hours ahead of time, and struggling through the snow on foot, was nearly exhausted when she saw a man leading a horse. Here was her opportunity, and crouching upon the horse's back, dauntless and unafraid, she rode several miles through a howling, freezing tempest to reach her post of duty. This spirit of service as it is displayed by the telephone operators is proverbial, and they rise to heroic sacrifice, modestly happy at the thought that they have done a little more than might have been expected of them. The spirit which is capable of maintaining such glorious traditions of the operating force must necessarily have its foundation in the spirit of everyday service which needs no emergency to arouse it:—for the Company is rendering service *every day.*

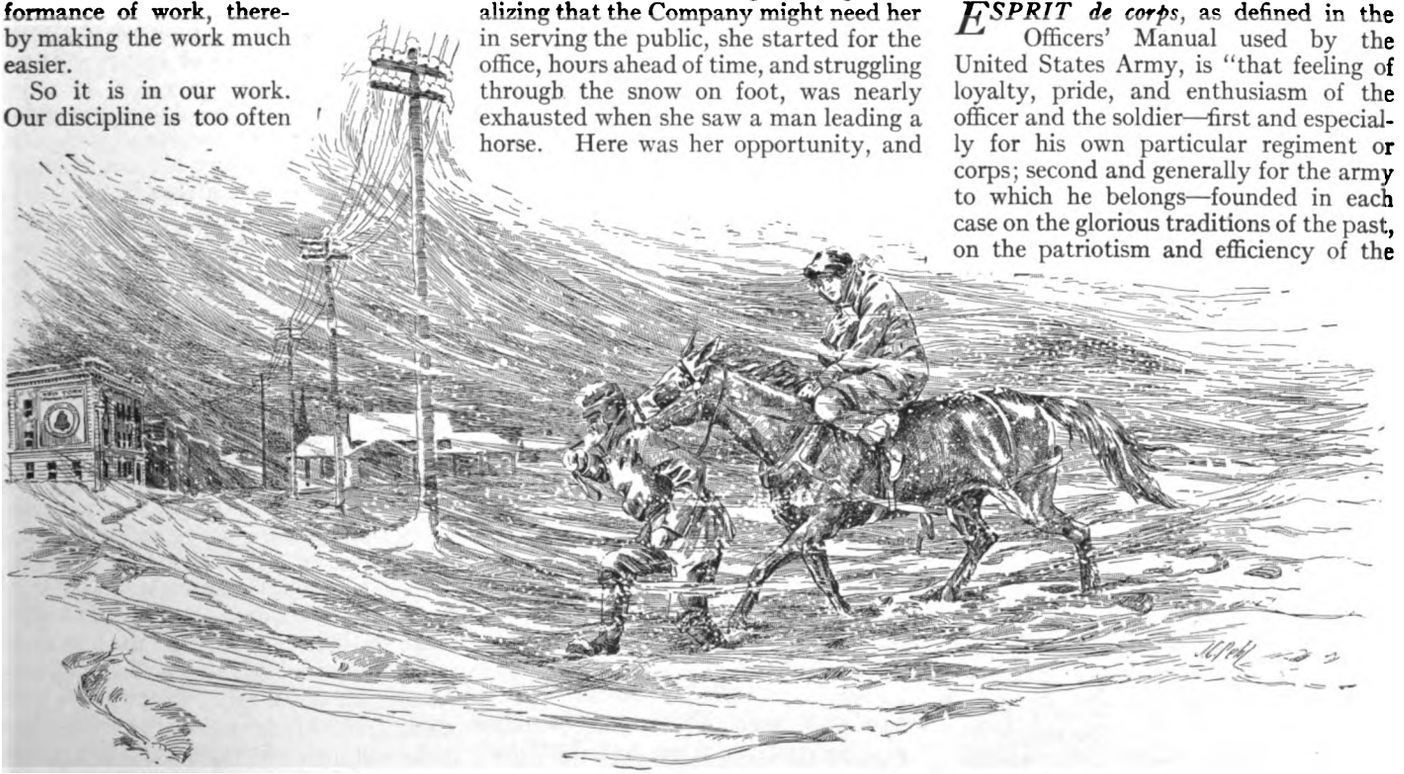


Like an Orchestra Conductor Leading His Musicians

Such a spirit actuating the operators will respond to every appeal, from the public or their supervisors; and the supervisors, in creating and developing it among their operators, find the true basis of their leadership. The *esprit de corps* of the Company, of the department, of the operating force, is what everyone must strive to create and sustain.

Esprit de Corps

ESPRIT de corps, as defined in the Officers' Manual used by the United States Army, is "that feeling of loyalty, pride, and enthusiasm of the officer and the soldier—first and especially for his own particular regiment or corps; second and generally for the army to which he belongs—founded in each case on the glorious traditions of the past, on the patriotism and efficiency of the



A Montclair Operator Braving a Howling Blizzard to Reach Her Post of Duty

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present, and on the determined resolve in future war and peace to uphold the prestige, the honor, the tradition of the army and of his regiment or corps—nay, more, to go further and increase the prestige, the honor, the tradition by adding something thereto through *individual* acts of his own." How closely this fits our own case!

But perhaps all this will seem, to some, entirely too idealistic. How does it work out in this hard, business world? It works out in this way: In this telephone business of ours there are just three interests concerned—the Subscribers', the Company's, and the Employees', and these are absolutely interdependent and complementary, a perfect trinity of interests, so to speak, with the employees occupying an intermediate position and binding together the other two. To the extent that these interests serve each other, they serve themselves.

On one of THE TELEPHONE REVIEW covers was a picture of a lineman in a storm, reproduced from an oil painting which hung in Mr. E. J. Hall's office. It was a splendid picture of this trinity of interests, a picture symbolizing "The Spirit of Service." It is hard to imagine a picture that would more clearly portray the Telephone Company spirit.

There in the foreground is the trouble-hunter, representing the employees' interests. There also is the pole line, the "plant," representing the Company's interests. But where are the subscribers' interests? Look again, and give rein to the imagination. There they are, in the stalled train. No, not the railroad train just visible in the background of the picture, but the invisible "talk train" that is trying to run along the telephone line, and can't because a wire is down somewhere. Employees' interests, Company's interests, Subscribers' interests—all at stake!

Self-interest

TO get all employees imbued with the proper spirit, we must develop as much as possible the idea of proper *self-interest*. Everyone must get this thought thoroughly in mind: Serve well your superior officers, serve well your subordinates, your subscribers, and your Company; in other words, give of your very best in everything you do, in order to serve well *yourself*—your own best interests. In passing, however, it may be well to point out that one's best interests are not always the dictates of one's inclinations.

An Optimist—One Who Makes Delicious Lemonade Out of All the Lemons That Come His Way

Nothing is accomplished by shooting off a gun blindly. The satisfaction comes not in firing at random, but in hitting what is aimed at. How many operators — yes, and how many supervisors, are working aimlessly, and not giving a thought to their best interests? How many supervisors are giving their operators something to aim at? How many know what their own best interests are?

When the operating forces are all imbued with this spirit of service, through appeal to their true self-interest, they welcome instructions and criticisms from their supervising officers, they welcome every opportunity for doing something for their subscribers, their fellow employees, and their Company, and they are glad to coöperate and be loyal, for it is all the means of reaching their own goal—success in their work.

From Shakespeare's Hamlet comes the well-known counsel of Polonius to his son Laertes:

> This above all: to thine own self be true,
> And it must follow, as the night the day,
> Thou canst not then be false to any man.

In Military Park in the city of Newark, the signs, which ordinarily tell people to "Keep off the grass," are quite different. They read:

CITIZENS

This Park Is

YOURS

Help Us to Keep It in Good Condition

Here again is a striking example of an appeal to self-interest.

If there only could be signs in our offices reading something like this:

EMPLOYEES

This Business Is

YOURS

These Subscribers Are

YOURS

These Instructions and All This Apparatus Are

YOURS

Go About Your Work Accordingly

Cannot the supervisors take the place of such signs in our central offices?

From a Painting. "The Spirit of Service"

Future Benefits

THE supervisors have reason to congratulate themselves, not only upon the splendid work they are doing, and upon being engaged in such an interesting and important occupation, but upon the fact that they are passing through a period of education and development that would be hard to equal in any other business or in any educational institution.

Every day they are being called upon to exercise many faculties, such as obedience, control over self and others, loyalty and coöperation, justice, accuracy, alertness, cool-headedness, courtesy, and general knowledge of human nature—faculties which are thereby developed and which become part of their make-up. And when they leave the Company's service, what becomes of this endowment? They do not leave it in their lockers, but take it along with them—a real asset in whatever walks of life they may be entering.

May the supervisors fully realize the great importance of their work and seize every opportunity for better qualifying themselves for it! May they shoulder their responsibilities earnestly and enthusiastically! May they do their full share toward developing the desired spirit and atmosphere in their offices! And if they do all this, they will have the satisfaction of knowing that they are doing full justice to themselves as well as to their profession.

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"He Serves His Company Best Who Best Serves the Public"

Address by Mr. L. H. Kinnard, Vice-President and General Manager of the Bell Telephone Company of Pennsylvania, at the 164th Meeting of the Telephone Society of New York, February 15, 1916

IN a most felicitous introduction, Mr. Kinnard stated that it was his purpose to talk about a few homely everyday occurrences in the operation of our business, and their effect, saying: "We Pennsylvanians are most proud to be of this great Bell organization, the best organization in the world, I believe, with the finest men and women to be found anywhere, in its ranks. It seems to me that our organization has an attraction power for people who are worth while."

Continuing Mr. Kinnard said in part:

AT a telephone gathering somewhat similar to this, the question was asked, "What is progress?" and it was observed that in the answering of that question lies the measure of our success.

Therefore, we've got to be more efficient than ever; our system must be a better system than ever before; our service must never stop in its quick step toward perfection. And, too, we must always keep in mind that with certain people we are looked at askance just because we wear the badge of bigness which to them seems to mean a potentiality for all sorts of evil.

The little butcher on the corner who runs his business without the gracious guidance of a commission, if he is not quite honest and so wishes, gives false weight, false quality, or sells fake goods with impunity. The public, if it finds out his dishonesty, as it seldom takes the trouble to do, will simply turn away and say, "I got stuck, but it serves me right!"

Company Not Inanimate

On the other hand, the smallest mistake in policy—the least error and the slightest drop in the efficiency of our service—this same public will hold against the corporation and expect a strict accounting because, forsooth, they can't realize that the Company is not an inanimate object.

Many still seem to have the impression that it is but a bundle of musty stocks and bonds stored away under lock and key in some strong vault. They must be given the impression that YOU—and YOU—and YOU are the Company; that this organization is composed of this installer whom they saw at work, this salesman who is such a gentleman, this operator whose voice they hear every day. Frequently lack of appreciation and consideration are due to failure to recognize the Company as a person or a group of persons.

Personality

But, talking in the family, I think it is good that our boss—the public—is so strict with us. It makes us the more efficient and better servant. We've each one of us got to aid in manufacturing a personality for the Company. That company which can boast of a public that says: "The operators are gentle and quick," "the workmen are polite and efficient," "I like to go to their business office because the clerks are so courteous," has found a personality, and, in the eyes of its public and its clients, it is no longer a corporation soulless and exclusive, but one or more persons whom the subscriber knows and likes—a group of personalities; in other words: this man whom I, the public, know to be four-square; this operator from whom I, the public, have received efficient service.

It is all our jobs, therefore, to please this supercritical public. It takes but one man's mistake for the public to dub our Company and service "inefficient" or "indifferent"—one bad break, one error.

So, if we want to work for a public-serving company, if we take its pay, we've got to be a good and faithful public servant ourselves.

"Servant!" you say sneeringly, "I'm no one's servant." Well that's all according to the way you look at it. One political economist tells us "We are all servants of one another without wishing or knowing it."

'Ligion and Cooking

There are many kinds of service. You may have heard of the woman to whom a fat negro cook applied for a job. "But," said the woman, "I advertised for a *Scandinavian* cook." "Lawd sake!" replied the negro, "what difference do it make *what a lady's 'ligion* am dess so's she can cook?"

But it *is* the religion, so to speak—the high aim or proper purpose behind our service—that makes it noble or ignoble.

If we examine into the service we are supposed to give, I think we will soon see that this is no menial task of ours, no mere commonplace service, but one that ennobles, for its purpose is the broad good of all, its duty is human help.

Public service. Who are the public? What is service? How is public service to be distinguished from other general commercial pursuits?

The Public

First of all, the people collectively or in general, as you know, are called the public. A thing that is public is something that is open to the use or participation of all; either free or in payment of a fee—a hotel is public, a town pump is for the general use of all, and so are the street railways and railroads; the telegraphs and telephone service, and many other public utilities. Such public services can be refused to no person who abides by the reasonable rules and pays the reasonable fees asked.

Public and Private Service

The candlestick vender and the great companies that dispense electric light at the rate of 16, 1,600 or "what not" candle power, are at the opposite extremes of private and public service; one is an entirely private concern and its proprietor may refuse to sell if he pleases; the other is a corporation organized for private gain, it is true, but also bound to act in a capacity that is public—to open up its services to the body public and to provide adequate facilities for furnishing that service. It can refuse no one under certain reasonable regulations.

Common law, which requires public service from those who profess a public calling, goes back to medieval times, but in those days nearly all trades—even the candlestick vender whom I cited—were looked upon as public callings and, therefore, required by law to render service to all. The reason for this well illustrates the difference between the private and public service.

Early Examples

In those days, in each town and each manor, in every community, there were granted to guilds or to individuals the exclusive rights to manufacture, provide, or dispense the various necessities of life. The barber, the surgeon, the smith, the tailor, and the candlestick maker, granted exclusive right to their particular callings, were bound to treat all comers rightly and properly, else some of the public might have had to do without the

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necessities or conveniences of life, there being no alternative but to deal with these persons.

So, in those old days, the candlestick maker was most emphatically a public servant, at least in the cities and towns. Perhaps in the country someone might have used pine knots if the tallow man had refused to sell, but the city man would perforce have been in darkness.

Coming down to our days, we can therefore see that the electric light man or the gas man is our public servant, and that he must stand and deliver at the proper demand of anyone in general. If either of these men failed to do so, some man's business might suffer, some home might go unprovided with a vital necessity of life to-day. Thus a public duty and obligation would be neglected or repudiated, and for this the body public, of course, would have the right to hold the server strictly accountable.

Duty to Serve

Thus you see, too, that anyone may demand our telephone service because we have professed this extraordinary public duty to serve all comers with a necessity of modern life.

The hotels, the common carriers, the water companies, and many others must do likewise, but a department store, a grocer, a mechanic, or a haberdasher may refuse with impunity to sell us silks, Campbell's soups, tin roofs, or socks.

It is hardly likely that any of them would do so if we had the necessary jitney, dime, or dollar, but if they did, it would not be difficult for us to obtain what we needed—we'd just turn our steps to another little shop around the corner. So these businesses are not peremptory public necessities.

So much for the legal and political economy aspects of our public service.

We know we have to do these things that the public demands by right, we know we are obligated to those services, and in fact, we are fulfilling our duties.

Spirit of Service

Here's where the "religion" comes in, so to speak. Are we, in fulfilling these duties of ours, using our heads and, most important of all, are we ennobling our service by using our hearts?

Do we do our work by rote or do we have the true spirit of service? Are we merely day laborers working our figurative picks and shovels with our hands alone, amid phlegmatic puffs of corncob pipes, or are we skilled workers, experts, using the brain which has been given us to direct our hands; or lastly, are we masters, artists to whom all the world looks up because our work is inspired with a real spirit of service?

If we've got this spirit of service in us strong, I believe we can move the mountain of public opinion. All of us make mistakes at times, but, of course, that doesn't mean we're all bone-heads.

Nobody Home

We're most of us far different from the bell hanger I heard about the other day; the woman inquired, "Why didn't you send your man to mend my front door bell?" And he replied, "He did come, ma'am, he rang three times and no one answered, so he decided there was nobody home." I'm rather impressed with the thought that there was "nobody home" on both sides of that door.

We're not like that, but some of us fail to use our brains, always. Sometimes we shut our eyes to the opportunities that are ours; sometimes we get the "grippe" in our spirits and our initiative is all gone, then we are just day laborers.

But, you may say, all this is but theorizing. Tell us what you mean by the "spirit of service" and how we can apply it, and how we've failed.

Well, I will. I'll tell you about some little things that have occurred over our way that have indicated lack of the proper spirit and also the possession of it. You know it's the little things, the little daily happenings, that fill out the day and make it a day well spent or one that puts a debit against success.

Lost Bore

One day a man was sent to install an extension set. He had to bore from one room to another. He looked at the picture moldings in both rooms and said to himself, "I'll bore right above there." Then he went right ahead and when he had finished he was much surprised because he was unable to find where he had come through into the next room.

At last, by dint of much searching he discovered the place and his hair stood on end. The point of his bit had come out right in the middle of the forehead of an oil painting of one of the subscriber's ancestors. He hadn't measured and there was at least a foot of difference between the moldings in one room and the other. Carefulness should be the cardinal virtue with the installer who wants to be a successful public servant.

For one case of carelessness like this we have hundreds—yes, thousands—of careful jobs by men who have the "carefulness first" idea, but that isn't enough. Good jobs we are supposed to do, so they mostly go unpraised, while, in a case like this, it is natural for the subscriber to tell the whole world about the hole in his ancestor's forehead.

Traffic Problems

Mr. Kinnard then spoke of the problem that confronts the Traffic Department in handling the "peak" loads, such as come at Christmas, saying:

Traffic must study well the aspect of the Heavens, the social columns, the prize fights and the championship games, the effect of the European war on our load, as well as the four seasons and many other things, to obtain data that will enable them to handle efficiently every peak and drop in the curves that represent the events of the year.

I'm in entire agreement with Mr. J. C. Lynch, our General Superintendent of Traffic, that "fair telephone service" is just about as acceptable as "fair butter."

"Sometimes 'Supervision' is the Traffic Department's middle name," said Mr. Kinnard, and he might have added that similarly it is occasionally part of the cognomen of other departments also. The speaker illustrated his point by an amusing incident showing how supervision was carried so far that it caused unnecessary delay and expense instead of producing economy and efficiency. In a splendid tribute to the operating forces Mr. Kinnard said:

Tribute to Operators

Fast is the day passing when the jokesmith, failing in any other topic, dare turn his barbed witticisms upon the telephone operator. She is too important a personage in the everyday activities of the world—social, domestic, and business—and she has by her sound sense, quick-wittedness, and bravery in the emergency, impressed upon the public's mind that she who can meet the crisis when it comes so suddenly must ordinarily be faithful and efficient in her commonplace, everyday duties.

And there are many examples that prove this to be so. Two young boys living in a small town in Ohio went to the well one day to fetch a pail of water. In this case, as in the nursery rhyme, "Jack fell down." Head first, he toppled in and his brother was so frightened that he could do nothing but run back home screaming. The father started for the well, but the mother (wise woman) ran to the telephone. The doctor she called failed to answer and, nearly frantic, she hastily told the operator about the accident, asking for any physician.

The operator made an emergency call and secured a physician and then reported the call to her supervisor. That supervising operator was Miss Nora Harrison. I want you to know her name because I honor her for her quick wit and horse sense. She immediately got the fire department where she knew that a pulmotor was located, and the Fire Chief with that apparatus and the doctor arrived at the same time. That saved a life. The doctor himself wrote

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the Company that without the pulmotor the boy would surely have died.

Company Alert

In order to illustrate how the Company has to be on the alert to maintain service and meet emergencies, Mr. Kinnard related the following incident:

There's a place down in Jersey where they manufacture powder. Dotted over hundreds of acres are the little powder houses and they're working night and day and Sundays now. Every so often one blows up, as you've probably read in the papers. To-day we have two operators in the central office there at night. A few weeks ago we had only one —but now we've closed the barn door— not before the mare had been stolen— not before the service had been halted just at the moment when it was most needed.

The lone operator was working away one night not long ago. Suddenly there was a tremendous explosion. In an instant the sky was lurid with the dull red glare that brightened and flashed and fell. The girl put through one call, then she screamed, 'Oh! father, father! I know he is killed," and fainted dead away. Yes, this lone operator's father was an employee in the works.

As I said, now there are two girls at night and so far as we know, they have no relatives making powder. The first girl was transferred to another job, and, by the way, her father wasn't in the works at the time of the explosion.

Too Many Cooks Spoil the Broth

Another incident was told to show the lack of thoroughness on the part of employees by failure to "get together" when there is a piece of work in hand, causing subscribers to be annoyed by visits from a number of representatives of the Company, when one or perhaps two at the most might obtain all the information required by themselves and the others. Errors in bookkeeping and in the forwarding of bills were cited to show the ill effects upon subscribers who look to the Company for absolute accuracy. The fault of making promises not based upon full and complete information was pointed out, Mr. Kinnard saying: "Certainly a promise to complete a job on a certain date should be just as binding on the Company as a promise to marry would bind any of you young fellows to stand up and do your part on the date named." In contrast with these illustrations was one showing how a saving of 10,000 telephone books a year was effected in the city of Philadelphia alone by a suggestion from an employee as the result of a casual conversation with a subscriber who complained that he had more such books than he needed.

Public Understanding

The part which the public plays was referred to by Mr. Kinnard in these words:

Over 50 per cent. of service difficulties and strain upon the operating force is chargeable to the public, much of it due to lack of understanding by the public of the part it plays in the making of good, bad, or indifferent telephone service.

Here's a real opportunity, likewise a real job, for our publicity friends. Something has been done, but much remains to be accomplished. Not more than half the story has been told.

Mr. Kinnard continued:

Salesmen and Collectors

A friend who had just bought a beautifully bound set of books for his library was asked if he found them interesting. "Not very," he confessed, "but I'd feel better about it if the man who comes around to collect were as good an entertainer as the one who sold the books."

Isn't there a great deal of truth about that thought? A salesman is supposed to be suave and to talk brilliantly and, perhaps, wittily on a number of subjects. He is required to make the most of his personality—to make it count. But, on the other hand, the collector is generally expected to be just a collector —nothing more.

Why shouldn't a collector be taught to exert himself as much as a salesman so that his public will at least no longer look upon his visits with dread? There must be—there is a way to collect justly earned compensation without going through all the motions of pulling teeth.

Fox-trotting

In a business office there was a clerk who could one-step and fox-trot 'most as well as Vernon Castle himself. Some mornings the dance hours and the business hours met each other and nodded a sleepy "Good morning." It was on one of these days that the clerk was mechanically going over the delinquent stubs and arranging for disconnection letters with the final date for payment mentioned therein, when he came to the stub of Mrs. Vernon Spratt. He noted the date to be disconnected, but the name reminded him of a certain Mrs. Vernon Castle II, who could fox-trot—well, you bet she could—and then he got the dates mixed on the stubs.

The subscriber received the letter, noted that she still had three days and probably said to herself, "Oh, bother! I haven't any more checks. I'll stop down day after to-morrow and pay it myself." That night something happened: illness —the doctor was needed at once—but there wasn't any service.

You say, "Well, it serves a delinquent subscriber right." But remember that we can't tell our friends, the public, we are going to do one thing and then do something entirely different and expect to keep their confidence.

Bell Methods

I don't believe the sort of man or woman who fails to do a thing because it isn't her job is generally a Bell man or woman.

In another business office I know of, there is a young woman who, when she responded to a call, was greeted with a man's querulous voice. She sensed at once that this person could not be trifled with. He had been transferred several times through error or because the first person to whom he talked could not give him definite information; so, though the matter was entirely foreign to her work, she at once said:

"Please give me the facts and I'll get you the information you want as soon as possible." And what is more, she called the subscriber personally later and gave him the satisfactory information of which he was in need.

He was pleased enough to write us a letter about it. The many letters of commendation we do receive indicate that the public is appreciating our good work as well as condemning whatever "busts" we may make.

The Installer Again

An installer was anxious to get home one night—perhaps he wasn't the usual clock-watcher, but, at any rate, he left on the dot of five.

The line order on which he was working called for main and extension stations. The main station was completed and O.K'd. He said to himself: "I'll come back in the morning and complete this job," but he failed to back-order the installation of the extension. The next morning there was an emergency job to which he was delegated and he carelessly forgot about the extension station left unconnected.

About ten days later the subscriber wanted to know when his extension would be connected. The line order indicated that the connection had been completed and O.K'd. An investigation was made and in the meantime someone, anxious to please, hastened another instrument and material to the subscriber's premises. Now he had two instruments for extension purposes, but both were useless because unconnected.

I'm wondering whether we can ever please that subscriber now, no matter how well we serve. First impressions, you know, are apt to be firm and lasting impressions.

Pittsburgh Floods Harmless Now

Out in Pittsburgh the service has annually been impaired or stopped altogether by floods which struck certain sections and swamped the underground

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plant. People treated it philosophically; the public said, "It's the flood again," they were used to it.

Our own people said, "It's the flood," and they got together men and material and waited forty-eight hours or so until the high water abated.

But a man went to Pittsburgh who couldn't stand seeing our service out of business for forty-eight hours. He said: "We must make our splices tighter. We must get a watertight plant." "It can't be done," said the crowd who knew Pittsburgh, and they went on to explain how conditions were different in the Smoky City. But this man knew that "conditions" are marks that you get up against in life as well as at college and that they may be worked off if you've brains and energy.

So he sent for an air compressor and found that 18 per cent. of the joints were defective. That's why when a flood came in 1913, 2,500 to 2,800 pairs of working conductors were out of service.

It was only necessary to show where the trouble lay. Any man with pride in his work at all knew that he could make a perfectly water-tight joint. But having been unable to test it previously he had been content to let well enough alone. There are no floods now in Pittsburgh in so far as the telephone plant is concerned.

Bill Jones

Ever hear the story of Bill Jones? Bill Jones was running along at about a thirty clip in his Ford; it was nearing the close of day, the sun was setting just over the hill, and Bill had begun to think thoughts of the big supper he was going to tuck under his belt when he got home. So he gave her a little more "juice" and the good car jumped ahead.

"This is the line that gave us so much trouble last March," mused Bill as his practiced eye glanced along the heavy pole line at the edge of the road. "Some cold job," he thought. "Right about here is where we spent the best part of a day shoveling out the big truck." He shivered, and as his car reached the brow of the hill he whistled softly as he noted that a guy holding a pole at a most exposed location on the line was loose and the pole showed indications of leaning because of the drag on the other side.

"Number 743," he said to himself. "I'll report that in the morning."

A month passed. Once something did remind him of that loose guy. He tried to remember the number, but something else came along and he forgot to look it up.

Then one evening he came home tired and wet. A cold rain had set in. He told his wife he thought it was going to freeze and turn to sleet before the night was over, and she remarked that it was ust like that when the dreadful storm began last winter—that time when he had to stay away from home for a week. That's how the women folks think of it, isn't it?

Then he suddenly remembered that loose guy again. "By George, I hope it won't turn out that way," he muttered. But a good supper, the evening paper and the good warmth of the home soon made him forget and by and by he was drowsing. "Wake up, William, and go to bed, instead of nodding there," said his wife. "But don't forget to lock up, put the cat out, and wind the alarm clock."

Soon Bill was sleeping soundly. By and by he was awakened by the telephone bell.

"Holy smokes! It's snowing and freezing," he said as he jumped out into the cold to answer. It was the foreman calling.

"Bill, we've got some job on. Report at once," was the message.

Bill didn't know how he got into his clothes, he was so sleepy and cold, but first thing he knew he was whizzing along in a big truck through snow and sleet. He recognized an old black barn at a corner as they passed. Then he realized where they were going—they were on the road to that loose guy.

As they got to that exposed side of a hill which he remembered only too well, the pale gray light was struggling with the darkness of night. He thought he could see the road plainly, but never a pole. Every one of them was a dead man for a mile or so straight away, either pulled out by the root or broken off. Wires tangled up the entire roadside. There stood on the brow of the hill the splintered stub of that fateful pole, around which the loose guy had now wrapped itself in twisted loops, quivering in the forty-mile gale and singing a monotonous, humming song.

This is what it sounded like to Bill: "For the want of the guy the pole was lost; for the want of the pole the whole line was lost; for the want of the line the service was lost."

Bill stood there shivering and thought, "What will it cost, what will it cost?" Then he caught hold of the guy, which kept up its confounded humming, and tried to wrench it loose; his teeth chattering from the cold, he tugged and tugged.

Just then he heard his wife's voice saying: "Hold on, William; don't pull the bed apart." Then he woke up. It was cold, but the sun was shining, and he had hold of one of the brass rods of the bed, pulling at it with all his might.

You can bet your boots that Bill "beat it" for the office as soon as he could gulp down a cup of coffee and reported that loose guy. No more dreams for him.

I wonder how many of us have been in Bill Jones's place at some time or other! We've seen jobs that ought to be done—things we knew might make trouble for someone later, but one thing or another has led us away and we've forgotten until it was too late.

He who wants to serve well will be sure to remember.

Atlantic City Heroine

Down in Atlantic City a few nights ago, an operator stood at an end position of the switchboard scraping some multiple markings. It was five o'clock in the morning, calls were few and the other five operators were answering the occasional calls and sorting tickets.

The winter's night had not yet given way to the dawning day. The young woman as she worked had a window at her right hand just a few feet away. Suddenly out of the corner of her eye she felt rather than saw a flash of light. One glance told her that the hotel across the way was afire. In an instant she had given the alarm to the Fire Bureau and reported to her supervisor. Then she rang the hotel. She received no reply, but kept on ringing.

You read the story in the papers, of the rapid spread of the fire, of the lives lost and of the greater number saved. Without doubt, all but a few of the latter would have perished if the operator had not acted so promptly.

That is the story from the public's viewpoint. They've made a heroine of the operator, Miss Katherine Stokes, but every man and woman on the job that night showed what stuff he or she was made of. Scarcely sixty feet across the narrow street was this raging conflagration. The roar and pump of the engines was terrific right beneath the windows; the hoarse shouts of the crowd added to the din; and piercing shrieks could be heard from time to time which, though the operators dared not look, needed no great imagination to interpret; the room was getting hotter every moment—so hot that the globes on the gas fixtures were cracking and the smoke was coming in somewhere; the windows were breaking—plate glass could not stand such heat; the glare of the fire lighted the room so brightly that no one noticed when the electric lights went out; but still those girls worked on.

In the meantime the Chief Operator, who had prevailed on some passing citizen to bring her to the central office in his automobile, and the Traffic Supervisor, who had jumped fences and dodged through alleys to get to the office when he found that the police wouldn't let him through the fire lines, together with the Plant Supervisor and one of the Wire Chief's men, played chemical ex-

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tinguishers on the window frames to prevent their bursting into flames.

At last, however, the Fire Department ordered everyone out of the building and reluctantly the operators withdrew and the Plant men drew tarpaulins on the switchboards and the test table and pulled the main fuse.

However, in less than an hour the fire was under control and the people were permitted to return to the central office and the service was resumed. It was a close call, but it served to show how a force can be put on its mettle. Four or five of the day operators reported for duty and the District Chief Operator also hustled to the office.

The Plant men were all on the job in a very few moments and, in fact, it is probably due to their good work with the fire extinguishers that ruinous floods of water were not turned into the building by the firemen.

Public Opinion

I cannot help but quote from an editorial in the Philadelphia *Public Ledger*, which mentioned the name of our operator, Miss Katherine Stokes:

> These people showed how the sense of duty lives in those who are faithful in a few things day after day, with no thought of reward, and how the crisis, when it suddenly comes, finds them ready to meet it.

Interested in Our Business

What we desire will never be accomplished by the non-thinkers—the non-observers who are content to automatically grind away day after day in a meaningless sort of way—a type usually absent from Telephone Society meetings. If all the parts in this high-powered machine that we call the telephone organization were like these cogs, it could never be urged forward with a little richer mixture, nor could it climb hills on high gear.

Happily there are few persons of this sort among our telephone citizens. Most of us are much interested in our business because we like it. Lots of our recreation time is taken up with play that is really hard work, yet we like it—we're interested, we're playing to win.

I needn't tell the baseball player among you that it's hard work to pitch or catch a ball. How about the first days of spring training, when the muscles swell and ache and blisters form? And every other sport is hard work, but we like it because we go at it to win.

This is the way we telephone citizens like our telephone business. We're in it to win—we've got problems to solve, lines to build, service to perfect, and disastrous storm troubles to fight. Our end—our goal—isn't Friday, or the 1st and 15th of the month—we're not always peering 'round the corner of to-morrow to see whether "the ghost is walking." If we were, we might scare him away.

Telephone Society Meetings

Attendance at the Telephone Society meetings is usually well worth while. I'm glad to see such a large crowd of interested people. It shows we're anxious to learn—anxious to serve. We're filled with that sort of patriotism which is not at present found very generally outside of America—the patriotism of service, bred in peace, fighting the good battles of daily business—sometimes as heroic as those of powder and shot with victories that are ten thousand times more productive of good.

Patriotism of service—what do I mean by that?

Patriotism of Service

In these days when battles rage across the Atlantic, we hear that patriotism is shouldering the musket and fighting for one's country; fighting for a king, kaiser, czar, or what you will. We hear that in patriotism's name men leave their homes and families and travel miles to kill other men and to destroy their homes and families. We hear of men doing deeds of daring, saving comrades who have fallen, winning back lost colors and riding on to destruction amidst overwhelming odds. We hear of the Victoria Cross and the Iron Cross bestowed "for valor." That's one sort of patriotism.

There is a greater, more profitable patriotism than this. It is that spirit of devotion which fills the big army of Bell Telephone workers of whom we are all a part, making of them the wonderfully efficient corps that, more than any other thing, has contributed to the success of the Company. This patriotism of service is not on speaking terms with WAR. Its companions are PEACE and PROSPERITY.

Who of us has not felt a burst of pride when we have heard of a telephone operator who, at the risk of her life, has calmly and efficiently continued her work while all about her was destruction, and thus saved many lives! There was no room for any other thought or feeling in this operator's mind than that the service was needed—must go on—she must not stop. It is the unconquerable spirit of a Joan of Arc.

There is the lineman in the worst of the winter storms. Does he stop to think of cold or sleet or danger as he works his Trojan way through man-high drifts and weaves again into continuous strands the broken, ice-incased lines? What is his one thought? To bridge the gap—to get Bell service into action at the quickest possible moment. This is the patriotism of service I mean.

Winning Battles of Progress

All of us like to feel that we are part of this army that is going along day by day, winning the battles of progress, and we are, each one of us, a part of it. Whether we win or lose to-day depends greatly upon the individual man or woman.

An operator's mistake or tardiness may condemn the whole service; an installer's clumsiness mark the whole system as careless; a Commercial man's disregard of details may cause the expense and annoyance of a case before one of the State Commissions.

On the other hand, our opportunities for efficient work, for a stoppage of waste and extravagance, and for methods that will tend toward better service, are great.

One thing I wish to impress upon you: while the Victoria Crosses, the Iron Crosses, and the other honors of the military are bestowed for valor—in business the medal of honor goes to the man who uses his eyes and his thinking machine—who sees what is to be done and does it right; in other words, he gets a medal "for efficiency."

Opportunity

It is EVERYBODY'S opportunity that turns up in our daily work. If we make the daily grind into a daily thought, we will accomplish wonders. We'll get what we want and we'll have helped this Company of which we are a part—given one more reason for that pride of accomplishment that we all have, and we will have shown a real patriotism of service.

Patriotism of service! Whom do we serve? The PUBLIC. How are we to secure an even more cordial attitude toward our Company—a real friendship?

I have not time to elaborate this thought, but it seems to me to be very necessary to challenge every misstatement regarding the operations of your Company and your Company's attitude. Our ideals and ambitions, I am sure, are proper ones, and any member of the public who has a wrong slant should be set aright.

If the job is not a proper one for you to handle individually, refer it up or down the line as the case may be. Do not let your assent be secured to any statement reflecting on your Company by a bit of cheap flattery to the effect that you are all right, but your Company is wrong.

You cannot buy affection—friendship. The surest way that I know to secure a friendship is to give friendship.

Attitude Toward Public

I wish I could make you see that to bring our service to that state of perfection at which we are aiming, we must have more than a feeling that we must serve because we are in duty bound to do so. The perfect machine is not enough—the elements of courtesy and consideration must be largely developed.

I wish to point out that the attitude toward the public on the part of our employees should be the attitude that we

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so heartily advocate between the employees and their chiefs—between the employees and the Company.

This is the feeling that I think should be cultivated for the public on the part of each employee.

We must actually have regard for the people we serve. We must feel a real delight and satisfaction in serving them. If we begin by having a regard for this miscellaneous collection of people we call the public, and whom we are bound to serve, they'll soon grow into a regard for us. This is rather idealistic?

Yes, but I believe it is sound.

A Good Start

I think we have made a good start along this line. Traffic men have estimated somewhere how many seconds of extra time it takes to add "please" to their question. But of what significance are seconds lost when graciousness and courtesy are gained! As a matter of fact, I am told that there are no seconds lost—that in former days, when the operator came out with plain "Number," omitting "please," frequently our subscribers were so startled with the bluntness of the command that it took them a moment or two to readjust themselves and comprehend just what was wanted. The word "please" is a symbol. We are pleased to serve—we have a regard for our patrons and it is a pleasure to fulfill their wishes.

Our Traffic Department tells me that about $150,000 a year is the cost to the Eastern Group of answering the subscribers' question as to the time of day. But do we give this in a surly manner as if we begrudged doing so? No, that wouldn't be rightly serving our subscribers whose monthly payments make up the revenue on which we are dependent. We tell them the time in a manner that cannot help but impress them that there is nothing we like to do better. We say, "You are welcome," to their thanks.

The man in the business office—the man who sells service—the man who installs—each one has the very same opportunity as the operator for impressing the public with the fact that we like to serve them.

"Thank You"

Another illustration from the Traffic Department: Over our way when a subscriber makes a particular person toll call, the operator after getting the information says, "Thank you, Mr. Blank, you will be called." Of course, why shouldn't she do so? That subscriber is buying some service of us. We thank him.

The cashier thanks the subscriber who pays the bill, the salesman thanks the man who signs the contract; all this comes naturally, and in the thousand-and-one transactions of business every day, we none of us may ever let one person feel that we have left anything go unappreciated.

A soulless concern we are not. We refute such a charge. We are a concern of as many souls as there are employees. The Company has not one soul—it has thousands—each, I hope, filled with that patriotism of service that consists of a devotion to our Company and our own particular jobs, and a feeling of real, enthusiastic regard for the people we are serving.

Give Us Men

What we need is Men—I mean real men, giving of the best that is in them to aid in discharging our duty—a public duty. Many we have, and is it too much to hope that many others are growing and will continue to grow to that measure of a man, acceptable for public duty, so aptly described by Dr. Holland in that wonderful prayer of the troublous times of the early fifties, when he said:

God give us men! A time like this demands
Great minds, strong faith, true hearts, and willing hands.
Men whom the lust for office cannot buy,
Men whom the spoils of office cannot kill,
Men who possess opinions and a will,
Men who have courage, men who will not lie,
Men who can stand before the demagogue
And damn his treacherous flatteries without winking,
Tall men, sun-crowned, with head above the fog,
In public duty and in private thinking.

Operating Efficiency

IN a letter dated February 15, the Rev. C. J. Harris, of Flushing, L. I., says:

Let me say this: I have had telephones in many cities, from New York to San Diego, and Oklahoma and Georgia, but when it comes to general service I have never seen the equal of yours, and too much cannot be said for the character of your telephone girls who evidently are limitless in their capacity for patience and courtesy. I have used the telephone constantly in New York and Flushing.

It was very considerate on the part of the Rev. Mr. Harris to write this letter. It required service of the kind the Company likes its operators to give, to inspire the writing of it. Here may be found in a nutshell the answer to the question of "What is good telephone service?"

Only recently another Flushing subscriber called the Manager and said that while she was frequently called in error, her outgoing service was very fine; that she called a great many numbers in the early morning and always got excellent service, and that as she knew the operators were not allowed to talk to subscribers and therefore she could not thank them personally, she took this means of doing so.

A letter from a Brooklyn subscriber in the Flatbush District reads as follows:

295 LINCOLN ROAD, BROOKLYN, N. Y.,
January 14, 1916.

General Manager, Flatbush Branch, New York Telephone Company,

DEAR SIR: It gives me a great satisfaction to know that I can call to your thoughtful attention and consideration my little story of perfect service from one of your operators.

Throughout the past three months I have been constantly in need of intelligent, kindly and instantaneous service.

My only son lay dying with tuberculosis and finally passed away. It was often necessary for me to come into instant communication with several different people during those final months and, also, just after he died.

In my well-nigh distracted state of mind, I had the assurance of knowing that the moment I removed my receiver from its hook I would hear the sympathetic kindly voice and get the painstaking service of Operator 65.

This is all I have been able to learn of her, but I say, deep down from a mother's heart, "God bless No. 65, and may she know through her employers that her faithful services have been appreciated."

Very truly yours,
(Signed) JENNIE F. DREW,
OLIVER C. DREW.

In transmitting the above letter and a copy of his reply, to Miss Cullen, the chief operator at Flatbush, Mr. W. S. Salmon, the district traffic manager, wrote:

It must be very gratifying to realize that in our "Day's Work" we have been able to so shape our efforts as to give such entire satisfaction and happiness as is expressed by the writer of the attached letter, and I am sure that there is nothing that I can add to this letter to prove that courtesy and efficient service do bring their own reward.

Just a few days later another Flushing subscriber called the Manager and asked for the name of the operator who answered the six calls that he made at 10 A.M. on that date. He said he wished to send her a box of candy, and that he also wished to congratulate the Company on having such a courteous and pleasant-voiced employee. This subscriber stated that occasionally he had complained about the service, and he thought it only fair to commend it when it was so efficient.

Safe

"The telephone is a great convenience, isn't it?"

"I should say so. You can tell a man exactly what you think of him over the wire and have plenty of time to back down if he resents it."
—*Sunday World.*

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Main Society

Mr. L. H. Kinnard

MORE than 500 members of the Society, and a number of visitors, including Mr. J. H. Crossman, Jr., general commercial superintendent, Mr. J. H. Hons, auditor, and Mr. J. C. Lynch, general superintendent of traffic, Philadelphia, greeted Mr. L. H. Kinnard, vice-president and general manager, Bell Telephone Company of Pennsylvania and Associated Companies, as the speaker of the evening at the 164th meeting, on Tuesday, February 15. The meeting was held, as usual, in the United Engineering Building.

The subject of Mr. Kinnard's address was, "He Serves His Company Best Who Best Serves the Public." Mr. Kinnard sustained his wide reputation as a forceful and interesting speaker, with a rich and sonorous voice and most pleasing delivery. He captured his audience at once, and they responded to his sallies of wit and fairly yelled at some of his anecdotes in a way that showed he had them with him and that they caught the deep meaning of his address.

The Blue Bell Orchestra played selections before the opening of the meeting and after the meeting adjourned entertained the members of the Society during the social hour.

The vice-president, Mr. J. H. Gordon, Jr., presided, and to the great regret of the Society announced that Dr. F. B. Jewett, the president, was prevented from being present by sickness.

Hudson Section

INFORMATION was not received in time for publication last month that at the meeting in Albany on January 16, Mr. C. E. White was elected secretary-treasurer of the Hudson Section of the Society, to fill the vacancy caused by the resignation of Mr. F. R. Guardineer in consequence of his transfer to New York, as previously announced in this magazine. Mr. Guardineer had served as secretary-treasurer ever since the organization of the Hudson Section.

Central Section

IF a private vaudeville were arranged especially to suit your taste would you pay a dollar to see it?

If a sumptuous dinner were prepared just for you and your friends would you give a dollar to eat it?

These searching and pertinent questions were seriously asked the members of the Central Section in the last notice sent out, and in order to meet the members halfway in finding the answers, it was announced that both could be had for the same dollar provided the money was in hand by February 9. This warning was subjoined: "If it's not here by then you can't attend the Telephone Society's Annual Blowout at the Yates Hotel, Syracuse." Then came the date of the festivities, February 16.

As a result of this notice, the strictest economy was observed by about 260 members of the Society scattered throughout the Division, first, to raise the dollar, and, second, to be prepared by proper fasting to do justice to the specially prepared menu. Here's what awaited their gastronomic indulgence:

Cut Spikes ¾ in. Crushed Stones No. 71-A Heat Coils
Puller Battery Solution
St. Lawrence Submarine Soldering Paste
Scrap Grain Leather
Strain Insulators Hexagonal Nuts in Paraffin Oil
Strain Plates and Type A Knobs
Putty Cut-out Blocks
Black Asphaltum

It read like a supplies requisition on the W. E. Co., forwarded via Knife & Fork Route, signed by J. L. Parker, chairman; approved by E. M. Gladden, vice-chairman; and further approved by E. P. Brennan, secretary and treasurer. It looked formidable and official all right, and there it was on time.

Apprehension lest "private vaudeville" referred to the consequences which would follow the eating of that "sumptuous dinner" were soon allayed by sweet harmonies proceeding from the Blue Bell Orchestra under the Leadership (capital "L," Mr. Printer) of Mr. F. J. Chesterman, division plant superintendent and chairman of the Society's Papers and Meetings Committee. The newspapers say Mr. J. Clancy Hopkins "had" several numbers and Mr. Lew Benedict "entertained" with a monologue in continuation of the aforesaid vaudeville. Then there were several songs, by whom unknown to the writer, and a whistling solo "offered" by Mr. J. P. Jones, of the Binghamton commercial office. In conclusion there was a sketch entitled "Running for Office," put on by Messrs. W. B. Dunn and J. H. Guilfoyle, of the Syracuse commercial office. (Perhaps that was designed to settle the dinner vicariously, as violent exercise after eating is not recommended by Dr. Doty.) The purport of the sketch was to show a lineman applying to the superintendent for a job, but our informant does not elucidate as to whether he got it or not.

Emergency Service

A CASE of serious illness recently occurred in Dover, and it being necessary to isolate the patient, a two-room house was built on the mountainside about a mile out of town. About 11.30 on a Saturday morning word was received that a telephone would have to be installed. Acting on verbal orders, telephone men ran over 2,000 feet of line, set one pole, placed outside protector, and the instrument was set and working by 5 P.M., while the house was being put up. This work was performed by a foreman, a lineman, and one installer, and the town officials commented on it as a splendid example of coöperation and efficiency in the public service.

WM. J. CLEELAND,
Plant Department, Dover, N. J.

The most important part of every business is to know what ought to be done.—COLUMELLA.

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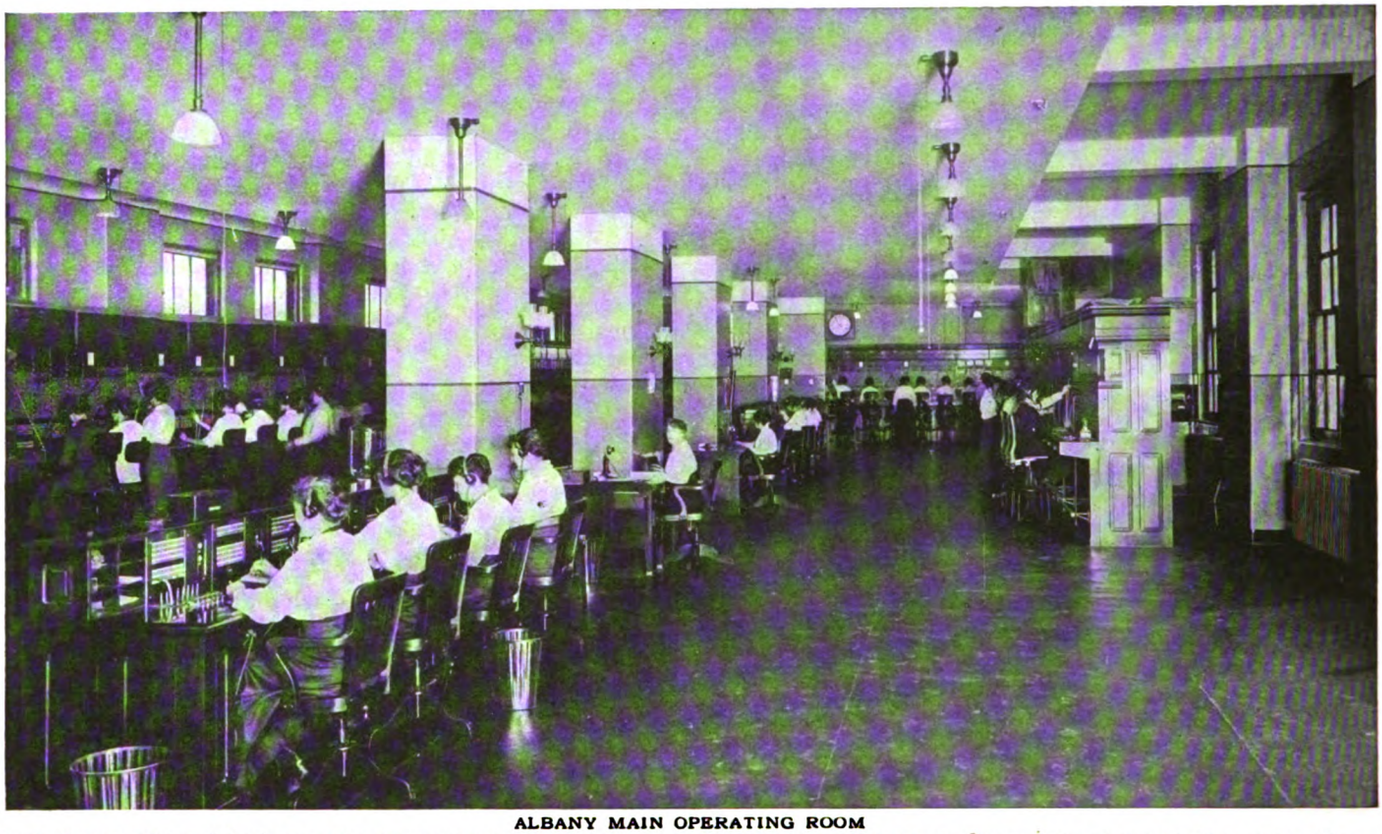
Albany Cut-over

"Are You Ready?" "Yes." "Shoot!"

And in 30 Seconds 5,214 Lines, 12,602 Stations, 469 Inter-office Trunks, and 141 Toll Lines Were Transferred from the Old to the New Telephone Building



ALBANY MAIN OPERATING ROOM

In the Foreground Complaint Operators' and Record Clerks' Desks, Assistant Chief Operator and Information Operators. These Occupy the Center of the Room. In the Background Is a General View of the "A" Board. On the Right Is the "B" Board.

IN the presence of Hudson Division officials of the Company and others from New York and the Central and Western Divisions, the equipment in the new Albany Telephone Building was cut into service on January 29 at 10.36 P. M., thus marking the completion of the Company's promise to give Albany a telephone building with the most modern equipment, and telephone service the equal of any in the world.

ALBANY MAIN, CHIEF OPERATOR, ASSISTANT CHIEF OPERATOR, AND SUPERVISORS

Left to Right—Top Row—Miss M. Moore, Evening Chief Operator; Misses J. McCarthy, P. Celcis, J. Mahoney, C. McCormick, A. Burnap, A. Tingstrom and M. E. Allen, Supervisors; and Miss J. Bigley, Night Chief Operator.

Second Row—Misses M. Daller and M. Maher, Supervisors; Miss M. M. Allen, Assistant Chief Operator; Miss Leila McMinn, Chief Operator; and Misses B. Tallon and L. Buchanan, Supervisors.

Front Row—Misses A. Gleason, E. Connors, M. McGowan, C. Battle and M. English, Supervisors.

The story of the Albany "Main" cut-over is worth telling briefly, for it marks an epoch in the history of the city and in the growth of its telephone service. The article in last month's THE TELEPHONE REVIEW described the telephone development in Albany from its beginning. That and previous articles have described the building, so it now remains to tell of the actual transfer.

The switchboards and

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other equipment, installed by the Western Electric Company, were completed within schedule time and it is a pleasure to say that the Western Electric Company was congratulated by some of the higher officials of this Company, when on a recent visit to Albany, as having done one of the best and most workmanlike jobs that they had ever seen.

View of "A" Board in New Main Operating Room

Preparations for the cut-over were in charge of a committee, made up of representatives of each department involved. This committee held meetings every week and discussed the work, so that the representatives of each department knew at all times just what the other departments were doing and how their part was progressing. The date set for the cut-over was January 29 and everything was in readiness when the hour arrived. The various steps in preparing for cut-overs have been so fully described in former articles that it is of little interest now to recite them. There were no particular plant features outside of the ordinary, except that it was the first big job in the Hudson Division where 900-pair cables were used. The cut-over was arranged for in the usual way by preparing to pull the heat coils in the old office by placing a large cord behind the heat coils.

In the new office a combination of plans previously used was devised to permit of an instantaneous cut-over and at the same time to avoid trouble from an accumulation of dust in the cut-off relays.

After the Western Electric Company completed their test, brass details were used to wedge the armatures of the cut-off relays. This allowed the covers of the relays to be replaced until the day of the cut-over, when the details were removed. The contacts of the relays were then kept open by strings. Ten strings were used for each bay of the rack, each string taking all of the relays in a single vertical line. These strings were fastened at the top to the iron work of the relay rack and at the bottom of each bay to a wooden strip. A slight outward pull on this strip served to release all of the relays in the entire bay.

The actual cut-over was made at 10.36 P.M. when the signal was given by telephone from the new office to the old in these words:

"Are you ready?"

"Yes."

"Shoot!"

Within twenty-five seconds the word came from the old office, "All out." Within five seconds the relays in the new office were in operation, so that the entire cut consumed thirty seconds. There were two permanent signals after the cut-over and in addition about thirty signals were lighted, due to an old type of protector springs on the old "Main" frame on which metal stops were used between the line and switchboard springs instead of the rubber bushings used on the later types. Immediately after the heat coils were pulled, the men on the job in inspecting the protectors found these springs and cut the cross wires, thus clearing the trouble.

The number of lines cut over was 5,214, the number of stations 12,602, the number of interoffice trunks 469, and the number of toll lines 141.

The "Main" operating room is located on the third floor. The "A" board consists of 72 positions and the "B" board of 14 positions with an equipment of 7,200 subscriber lines and an ultimate capacity of 10,500 lines. The central information desk and central

Sitting Room

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complaint desk have 8 and 4 positions respectively, which serve "Main," "West," and "East." The toll operating room is located on the second floor. The toll board contains 10 inward and 22 outward positions with a multiple of 280 toll lines. The information and recording board consists of 10 recording and 2 information and rate positions. The terminal room and Wire Chief's equipment are located on the fourth floor.

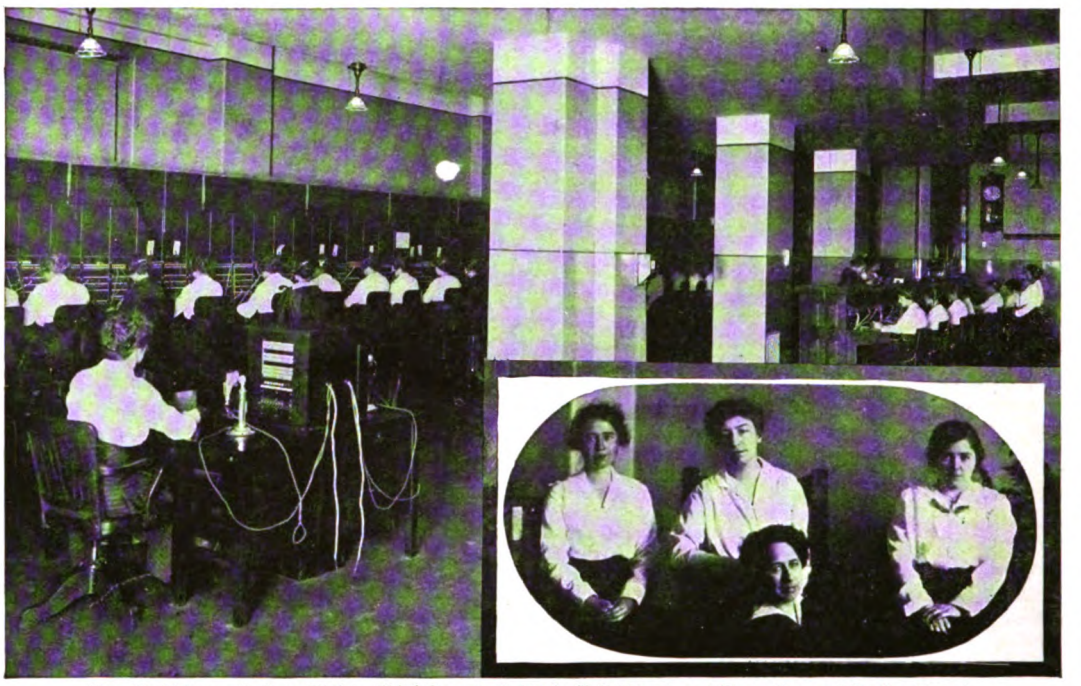
The operating rooms are well lighted and decorated in colors which are least tiring to the eye. The floors are covered with soundproof battleship linoleum.

The rooms are ventilated by blowers or centrifugal fans which provide an entirely new supply of air every six or seven minutes. These fans in the winter time furnish 2,000 cubic feet of air an hour. The temperature also is regulated so that it usually ranges between 68 and 72 degrees. Exit from the rooms in case of fire is obtained by doors leading to elevators, to the regular stairway, and to an outside balcony opening into an inclosed smoke tower which is virtually a building by itself.

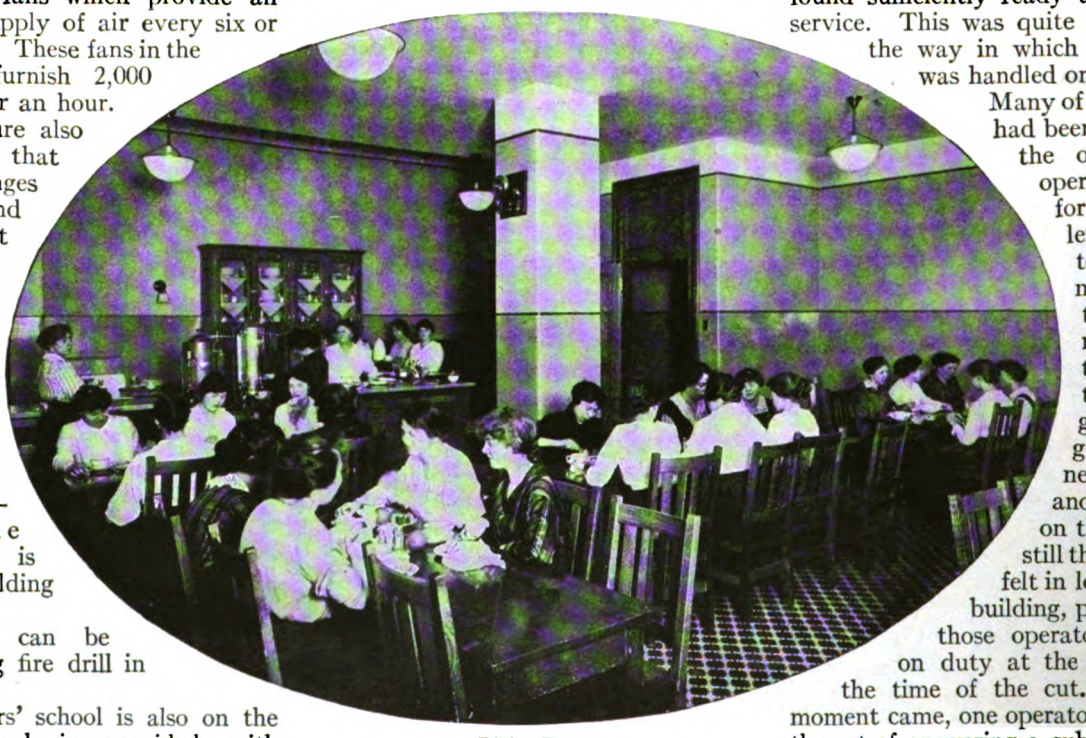
The rooms can be emptied during fire drill in 59 seconds.

The operators' school is also on the third floor and is provided with a reception room for applicants, a private office for the manager, a study room, a practice switchboard room, and a recitation room. Also on this floor are the operators' locker room, rest room, dining room, and special retiring room.

The operators' rest room is particularly attractive. Its dimensions are 20 feet by 51 feet 6 inches, with five windows facing on Park street. The color scheme of the decorations is light olive green, which is very pleasing to the eye and restful. The floor is covered with a rich green Wilton rug with the exception of a space of about two feet between the rug and the wall. This space is enameled with a darker shade of green which harmonizes with the tones of the walls and the rug. The windows are curtained with cream marquisette scrim with drapings of olive green. The entire effect of the decoration with the brown furniture and sepia toned pictures with brown frames is charming.



New Toll Room—Left to Right—Chief Operator's Desk, Toll Board, and Recording and Rating Board.
Insert—Toll Chief Operator and Supervisors—Misses Bertha M. King, Alice A. Allen, Toll Chief Operator, Anna M. Butler, and Elizabeth V. Harpenger



Dining Room

The Old and the New

When the original central office in Albany was transferred from the Broadway building to the then new office in the Chapel street building, the operators carried their chairs from the Broadway office to the new Chapel street office and back again three times before the new equipment was found sufficiently ready to handle the service. This was quite a contrast to the way in which the cut-over was handled on January 29. Many of the operators had been employed in the old "Main" operating room for a sufficient length of time to become very much attached to the surroundings, so that although there was great desire to get into the new building and to operate on the new board, still there was regret felt in leaving the old building, particularly by those operators who were on duty at the old board at the time of the cut. When the moment came, one operator, who was in the act of answering a subscriber's call, turned to her supervisor and exclaimed, "Oh! They have done it!" as she lost her subscriber at that instant. When the last signal lamp had flashed, the operators continued to sit at their

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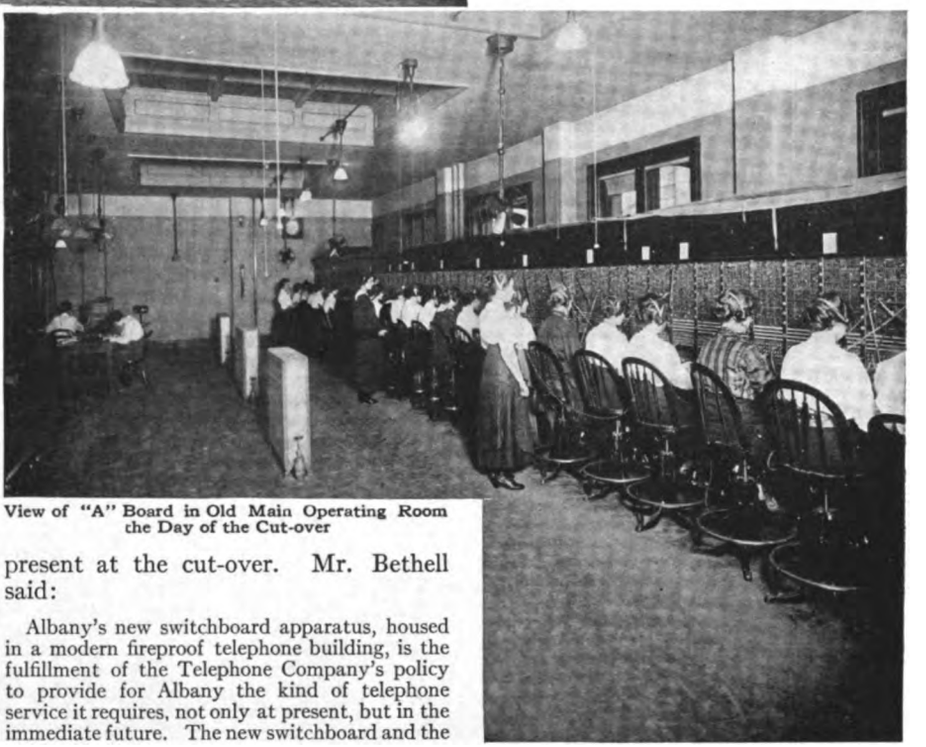
Continuation of "A" Board in Old Main Operating Room the Day of the Cut-over. Small Board in Front of Picture is Main Official. Sitting at the Chief Operator's Desk is Miss Allen, Assistant Chief Operator.

positions for some moments before they realized that their work among the familiar scenes of so many days was finished forever.

First Long Distance Call

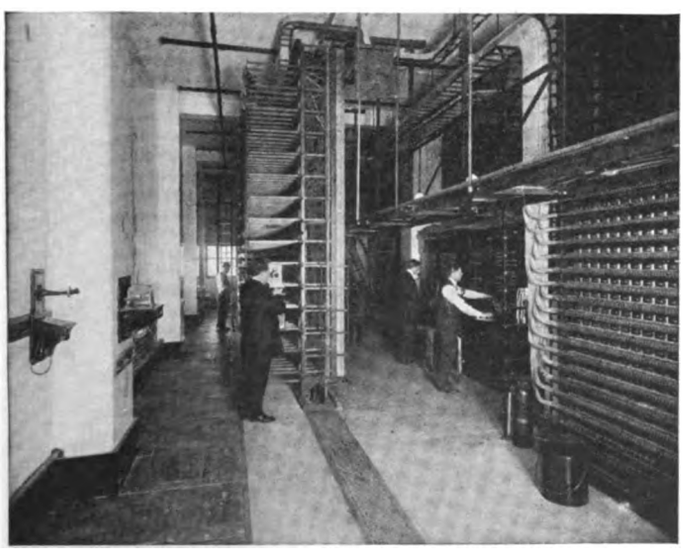
The honor of making the first long distance telephone call through the new board was given to Mr. Frank H. Bethell, vice-president of the Company, who talked from his home in Scarsdale to representatives of the press and to telephone officials present at the cut-over. Mr. Bethell said:



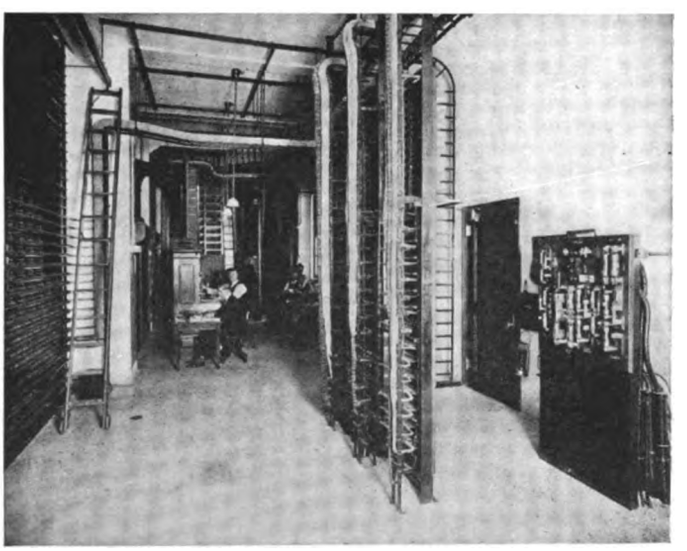
View of "A" Board in Old Main Operating Room the Day of the Cut-over

Albany's new switchboard apparatus, housed in a modern fireproof telephone building, is the fulfillment of the Telephone Company's policy to provide for Albany the kind of telephone service it requires, not only at present, but in the immediate future. The new switchboard and the new building offer tangible evidence of the Telephone Company's belief in the future of the city of Albany. Our faith in its development is expressed by this fine structure of stone and steel and thousands of dollars' worth of new telephone apparatus that will provide telephone service adequate to meet the growing demands of a community increasing its activities in no uncertain manner. I congratulate the telephone men of Albany on the success of the cut-over from the old to the new central office, and the city of Albany upon the acquisition of new telephone equipment that is unexcelled. I want to say, too, that all through my negotiations with Mr. Peter D. Kiernan, Mr. McKinney, Mr. Read, and others of Albany's prominent citizens, I and my Company have been treated with the utmost consideration and fairness.

Mr. James H. Manning, a director of the New York Telephone Com-



Left to Right—Main Distributing Frame, Toll Test Board, and Local Coil Rack.



Left to Right—Local Test Table, Wire Chief's Desk, Rear of P. B. X. Fuse Panel, and Battery Fuse Panel.

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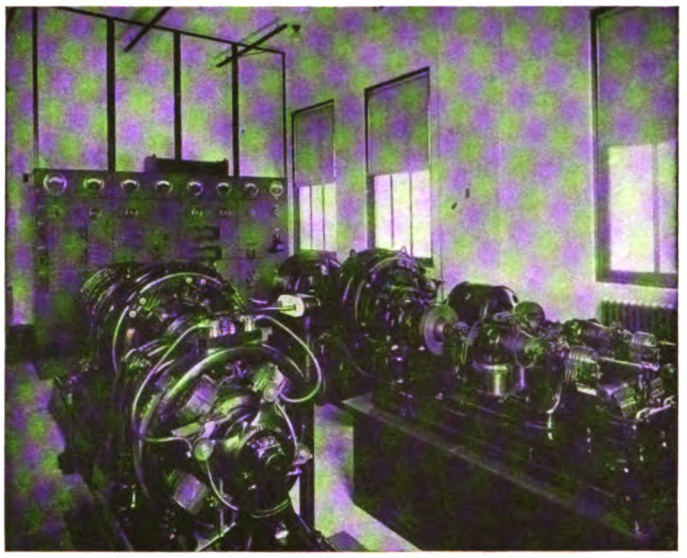


Charging Units and Ringing Machines, Albany, N. Y.

Cable Vault, Albany, N. Y.

pany who resides in Albany, in replying to Mr. Bethell said:

This is a great night in Albany. Everything is lovely. This is a great service and everything is working beautifully. It is a great change from the old days when we went into the old building with fifteen operators. The people of Albany are delighted with the building and this event here celebrates in a manner the twenty-fifth anniversary of my service as a director of the Company.

Mr. Arthur D. Hecox, representing Mr. Lynn J. Arnold, president of the *Knickerbocker Press*, talked to Mr. Bethell and congratulated him on the achievement, saying that the people of Albany were grateful for what the Company had done for the city.

Who Is the Bad Man?

WE all have had the call of trouble—the frantic cry of fire—the hurried call for the police and the ambulance, and with this modern necessity and its ability to do things at once we have been able to accommodate.

Now comes the question, Who is the Bad Man? and we will soon have to add another number on our emergency cards.

At 7.45 P.M., January 26, upon answering line signal and saying "Number, please," the operator heard a child's voice say:

"Send a Bad Man up here—send a Bad Man up here—baby's broke my dolly, send him up to-morrow."

MISS E. MULLER,
Waverly Evening Supervisor.

An Amusing Example of a Converted Kicker

THE following letter, minus the address and signature, which, for obvious reasons, were "deleted by the censor," was received at one of our collection offices shortly after February 1.

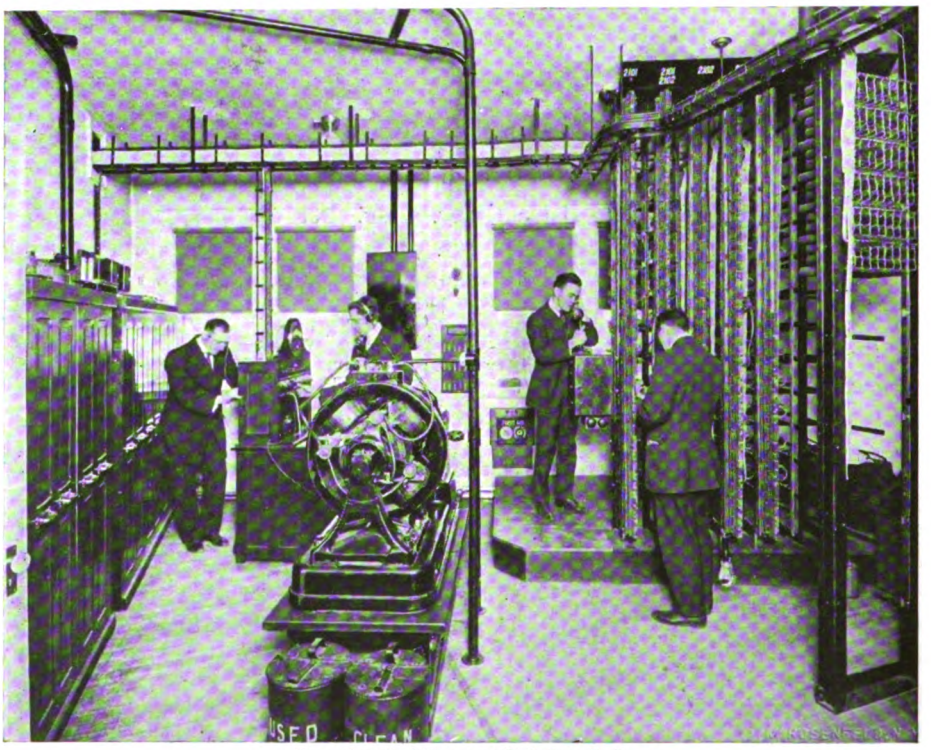
We hope the writer is the last of the "kickers" and that with his conversion there are now only friendly critics, who are willing to see that the Company is giving the public a "square deal."

It is true that observing the "fundamental decencies," as the writer of the letter says, is "good business," but there is a higher motive. Just as "there are some things a fellow can't do," so there are some things the New York Telephone Company "can't do," because they are against its principles.

The rebate to subscribers whose service was interrupted by the January storm was proper, in our way of thinking, although we were in no way responsible for the storm or its consequences. We are pleased that we have gained another friend. His letter follows:

I have at times complained about your methods, I have kicked about your charges and there have been occasions when I have sassed your operators. I shall undoubtedly do all of these things in the future, too. But just now I want to express my admiration for the rare spirit that led you to remit a part of this month's bill on account of last month's storm. I suspect that doing just that was the best sort of good business policy. I don't care, though, whether you did it for shrewd business reasons or not. No corporation would ever be likely to give up, voluntarily, some of the cash that it had a right to collect, under such circumstances as these, unless it had a certain understanding of and regard for the harassed and troubled feelings of its customers. And that sort of understanding is rare and to be appreciated.

Don't misunderstand me. I'm not rejoicing in the 51 cents I saved—though that will come in handy—but in the fact that I have found a public service corporation possessed of the discriminating sense that this action indicates. It gives me confidence that other questions should they arise will probably be handled in accordance with the fundamental decencies. That's why it was good business, too.



New Terminal Room at Babylon, L. I

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Babylon Cut-over

By H. C. Orth, District Traffic Manager, Suburban Long Island

BABYLON, L. I., OPERATING FORCE

Left to right—Top row: Misses Bela, Griffin, Howard, Tompkins (Suburban Chief Operator), Miller, Curran, and Place. Sitting—Misses Wright, Totten (Chief Operator), Ketcham and Reid.

A NEW No. 10 Western Electric switchboard was cut into service at Babylon, L. I., on February 8, 1916, at 10 A.M. The initial installation comprises four working positions, and there are at present 440 subscriber lines and 80 trunk lines.

The new switchboard is located on the second floor of the building occupied by the Bank of Babylon. Suitable quarters have been provided for the operators, and as it is planned to operate this office on a semi-agency basis at an early date, living quarters for an agent have also been provided.

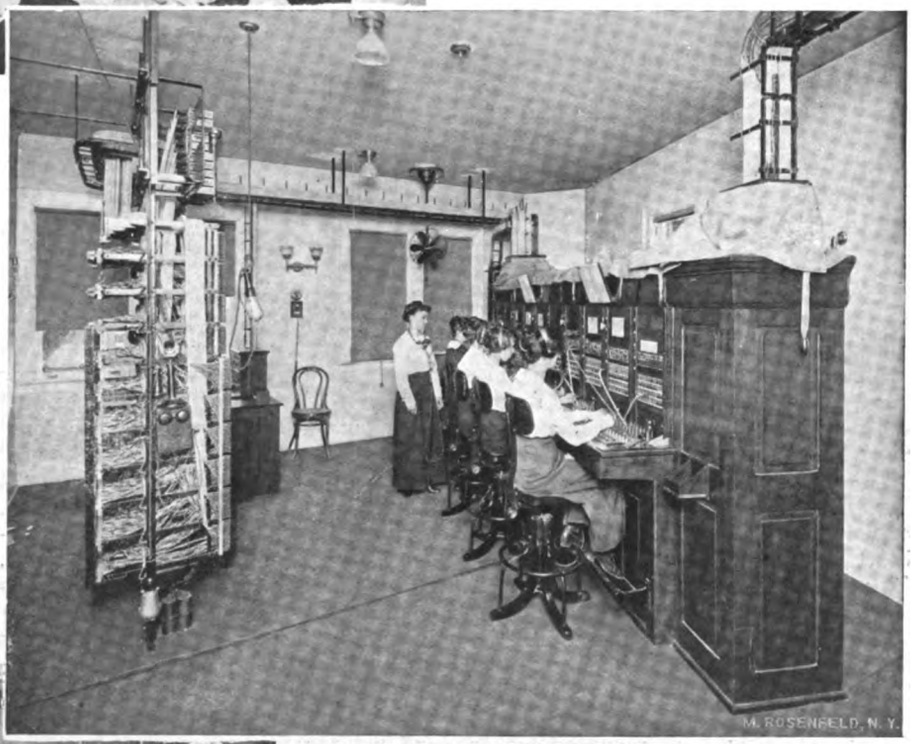
Not a single case of trouble was experienced when the 310 lines and 565 stations were transferred to the new office. The board was accepted by the Telephone Company on the day of the cut-over and the Western Electric men and Foreman J. Tobin left Babylon that day. Congratulations are due Foreman Tobin for the first-class condition in which the equipment was turned over.

The line and station growth of Babylon has been steady and progressive since 1901, as the following figures testify:

	Lines	Stations
1901	37	50
1904	74	121
1907	121	225
1911	215	409
1915	310	565

Babylon is situated on the south side of Long Island, about forty miles from the Pennsylvania station, New York City. The name of Babylon, as applied to this locality is said to have originated with Mrs. Conklin, the mother of Nathaniel Conklin, when a dwelling house was erected on the site of Gulick's drug store, on the corner of Main street and Deer Park avenue. A tablet in the chimney front of this house was inscribed with this legend, "New Babylon —This house was built by Nathaniel Conklin, 1803." Though a few houses had been erected, and several farms were under cultivation, as early as 1770, the place was not considered large enough to have a name of its own.

With the up-to-date telephone equipment which has been provided for Babylon, a future of increased activity may be anticipated.



The New Central Office at Babylon.

The Old Central Office at Babylon.

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The Conquest of Lucy Graham

By Dorothy Thorne

THE stars in their courses may fight for those who win, but certain it is that the winners help them do it. When events without a link of relationship between them work together for the "lucky" one, pure blind coincidence it may be, as it looks, but perhaps it is rooted in something more substantial. Alertness to seize every experience, search it, and use it, is bound to find, out of the many, two now and then that work together. And so the stars are aided in their enterprise. Which encouragement they seem to appreciate, since they appear to guide but little the destiny of those who let experience glide by without melting it into the materials of their lives.

Stars or sturdy energy—Margaret Richards didn't stop to think of the cause till long after, for she was too busy pressing on in the race with her friend Esther McKnight for the first promotion.

It had been a kind of sportsmanlike nip-and-tuck between them for years—long before they had dreamed of sitting at a switchboard—and Esther had nearly always been first to touch each goal they set, because she was more brilliant and quick with mind and tongue. But now Margaret was determined to outdistance her friend for once, by being the first of the two to win appointment as a supervisor. To this end, well understood between the girls, Margaret addressed her every faculty, not the least potent of which were a quicker sympathy, and a heart, not so much warmer than her friend's as nearer the surface, and so, sooner reached.

Things were just working up to the pitch that exhilarated Margaret—the "busy hour" was approaching, and when the calls began to come in faster and faster, her enthusiasm mounted higher and higher. She was on her mettle, where she liked to be better than a racehorse on the turf.

Partly because she loved the work anyway, she liked it at its height, partly too because she did it well, and so was doubly interested in turning it off with swift, capable touches, and partly, since she was a healthy, human, young woman, because she knew that Esther had as good a chance as she to be the next one appointed to the floor.

So she gloried in the mounting pressure of the work, for every height of good operating she could climb would bring her so much nearer the first peak they raced toward.

It was not all in good operating, though, Margaret and Esther agreed in their many half-fooling talks about their relative chances for promotion. Girls of the caliber of supervisory material must have that intangible ability to reach and understand the girls with whom they work. How much good would they be at that? Laughingly they told each other they had the secret; if they were promoted, their divisions would be patterns of perfection, so competent would they be to teach and weld their operators into the ideal division.

"Unless one was Lucy Graham," Esther would add with a laugh, whereat Margaret would square her shoulders and remark, stoutly, "I don't care, there *must* be an answer to Lucy Graham."

Lucy was the riddle of the force. She was unapproachable. Pleasant always, in a negative sort of way, she was very reticent, very little interested in what went on around her, very prone to keep apart. No reason could be found, for Lucy Graham certainly wasn't haughty, everybody agreed, and she didn't seem bashful. Every other explanation was disposed of as quickly and Lucy remained the impossibility of the force. With some fixed conviction Margaret regarded her as the towering barrier across her path. Unless she could melt the atmospheric paraffin with which Lucy seemed to have sealed herself against all approach, Margaret felt she could never prove herself able to win the goal ahead. With the other girls, Margaret was sure she could do well as a supervisor, but with Lucy Graham she felt as impotent as a disconnected subscriber's set.

No such thought troubled Margaret's mind now, as the lights came and went faster and faster before her. She was conscious only of the exhilaration she felt in the rising intensity of her work. Several lights appeared almost at once, and instantly her plug was in. Instead of the usual quick request which she could fill in a second, there was a pause and after another "Number please?" the sound came at last.

It was a far-away, timid little voice, soft and gentle, but suggestive somehow of the sound of a violin. Like a violin it could have expressed all the thoughts and emotions of human experience.

"Will you let me speak to my boy?" came the words, and for the flash of an instant the face of a little white-haired old lady crossed Margaret's mind as she took down two pairs of cords, and repeated gently "What is the number, please?"

"I do not know the number, but he works for the Star Co. His office is on Elm street."

"I will give you information," Margaret answered, but instantly the voice came again with heartbreaking earnestness:

"Oh, please don't give me the information bureau; I shouldn't know what to say to them, and Henry would never forgive me for bothering them. I thought perhaps you would tell me the number, for I must talk to him."

Margaret smiled softly. It would do no good to explain to the little old lady that it wasn't Star & Co.'s information bureau she referred to.

"I wouldn't trouble you," the musical voice went on, "for perhaps you have something else to do, but I cannot see to do it myself; I read so much in a poor light when I was young that I cannot see at all now. Do be careful of your eyes always, my dear."

The lights were alive around her, and calls were being taken up for her by her neighboring operators. Esther, courteous always, would nevertheless have been restive at the strange little delay, but Margaret was quite calm, much as she loved the highest pitch of action. Her heart went out to the gentle little lady with the violin depths in her voice.

"I have a friend upstairs who will look it up for you," Margaret said quickly, "if you will tell her your son's full name. I'm sorry not to be able to do it for you myself, but my friend will find it."

"Oh, thank you," breathed the little lady in deep contentment, reassured since it was just a friend of the girl she had appealed to, who would take care of her. The dread, impersonal "unknown," which would have frightened her speechless if Margaret had insisted that it was "Information" to whom she must speak, was gone.

It was with a fervent petition that whoever took the call would understand too, that Margaret put the little lady in on "Information."

A minute or two later, when Margaret was again in the full swing of her work, she heard the same voice again, giving her the number.

"Is that you, my dear?" the gentle tones added. "Your friend found it for me so quickly. Thank you"—and the connection was up.

When Margaret had left the board and could think of the strange little lady who was so unused to telephoning, so eager to chat, and explain everything, the vibrant voice kept returning to her, more for the tones than the words themselves. "For I must talk to him"—a musician might have learned expression from those modulated syllables. "But I cannot see to do it myself; I read so

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much in a poor light when I was young that I cannot see at all now. Do be careful of your eyes always, my dear"—the rich cadences of her voice had so vibrated with the deep earnestness and sympathy that Margaret found herself repeating the words over and over as she walked into the sitting-room.

Esther sat reading, with her magazine in front of her as she faced the window, with the result that every vestige of light from the window was successfully prevented from reaching the page. At the sight of Esther, in this characteristic attitude, which Margaret had hardly noticed till now, the words echoing in Margaret's thoughts seemed to spring alive.

"Back to the light if you want to keep your eyes," she said in Esther's ear, as she turned her friend, chair and all, until the light fell across the page.

"Peg, you nuisance, stop bothering, and come cheer me up," was Esther's response. "I've been trying to fathom Lucy Graham again, or pierce her reserve. She's as pleasant as usual, but she simply doesn't connect up with things at all, try as you may. I'm in despair."

"Despair, nonsense. We'll find the key to her yet. You could talk about despair if you'd heard what I heard this morning—only there wasn't any despair about it, it was all courage. I wish you could have heard that voice." And Margaret related the experience of the little blind subscriber.

Days later when a hundred other incidents at the switchboard and away from it had been melted into Margaret's experience, she was passing through the sitting-room when she noticed a girl reading, far away from the windows, unconscious of the strain on her eyes. Sensitive always now to the question of light, she started toward the girl and suddenly noticed it was Lucy Graham. She hesitated to speak lest it annoy the quiet little riddle, but she noticed an electric light just above, that Lucy had forgotten to turn on, so finally, walking around that side of the room, Margaret simply switched on the light as she passed.

"Oh, thank you," burst from the unresponsive lips of Lucy Graham with such warmth and sincerity that Margaret stopped in surprise, and, before she knew it, was telling of the little blind lady, and her wonderful voice, and the simple earnestness of her warning "Do be careful of your eyes always, my dear."

Lucy Graham's eyes were like stars as Margaret finished, and Margaret, at a loss to explain the unwonted vivacity and genuine interest, wondered what secret spring she could have touched to thus unloose the long-locked responsiveness.

"I'm so glad to hear the whole of it," Lucy said, "Ruth Doyle told me about her end, and the beautiful voice—Ruth got the call at 'Information.' And we've been wondering and wondering who her friend at the 'A' Board was. Oh, it was splendid you thought to tell that little woman your friend would look up the number for her, so she wouldn't be frightened. I wonder if I could ever have taken care of her so well—and in the height of the rush, too!"

"Of course you would. If you'd heard that voice you would have known just what to do." The girls laughed together at Margaret's summary dismissal of even a chance of doubt.

"Well, thank you for telling me about it, anyway," said Lucy, "and for reminding me of my eyes. It's careless when there is plenty of light from the windows, and plenty of electric lights for a cloudy day like this, to sit and read in a poor light. We ought to start a campaign for reminding people not to ruin their eyes. A 'Sit with the light on your book' campaign!"

Margaret paused a minute out of sheer delight at seeing Lucy Graham thus alert and interested. Lucy, with a funny little misunderstanding of the silence, had a shadowy return of that lack of self-confidence which, coupled with the unfamiliarity with the conditions and surroundings she had but recently come into, had held her so much apart from all the other girls until now. She added eagerly, with a whimsical smile:

"Even if you don't know Ruth Doyle, she's 'a friend of yours upstairs,' and she's a friend of mine, so you see we have a mutual friend."

Public Convenience and Necessity

AN illustration of the efficiency of the telephone and the part the telephone operator performs is given in a communication received from Mr. J. A. McEvoy, clerk in our Plainfield Commercial office. He writes that Mr. Harry S. Potter, of Plainfield, manager of the El Paso Street Railroad Co., desired to get into communication with Mr. Geo. E. Morse, of the El Paso Electric Railway Co., at El Paso, Tex., approximately three thousand miles distant, on a very important business matter. He doubted the possibility of talking to him by telephone, but put in a call at 6 P.M. Later in the evening the toll operator informed our subscriber that Mr. Morse was not at his office, but she found him at his residence, and completed the connection at about 9 P.M. via Denver, Colo.

The remarkable feature of this call is that Mr. Morse is deaf, but the two parties could hear each other as plainly as if they were talking from Plainfield to New York. Mr. Potter was very much pleased with the service rendered and congratulated the Company upon it.

The following story is printed just as it appeared in the Utica *Herald-Dispatch* of February 5:

TELEPHONE GIRL DESERVES PRAISE

For Calling Two Doctors When Small Child Was Severely Scalded

ACCIDENT OCCURRED IN SUNSET AVENUE

The general public does not realize to what a great extent it is indebted to the girls who operate the boards in the telephone offices, and it is very seldom that a case is brought to the attention of the many people who have occasion to use the telephones every day. A case of this kind occurred yesterday. A baby boy, about one year old, son of Mr. and Mrs. Jay Jones of 417 Sunset avenue, was severely burned by overturning a cup of scalding tea over himself.

Mrs. Jones went to a nearby telephone and tried to call a doctor. She made three attempts and received no answer. It was then that the quick-witted and ever-obliging operator came to her assistance. The girl at "central" recognized the fact that a doctor was wanted and probably desired in a hurry from the manner in which the calls were given and by knowing that the numbers desired were those of doctors. This girl knew the office hours of several doctors and "cut in" on the line long enough to ask Mrs. Jones if she wanted a doctor. Upon receiving an affirmative answer, the girl called Dr. Fred M. Kempf and later Dr. Robert Sloan, both of whom responded immediately and alleviated the sufferings of the child, who had been burned until its tender flesh was a mass of blisters.

The rules of the telephone company forbid making known the name of the quick-witted operator, but she certainly merits great praise for the way in which she acted. This is proof that the telephone company serves the public in many other ways besides that of merely making connections for conversation. Every girl is part of the big system, but it is the individuality that counts in a case like the one of yesterday.

Although the *Herald-Dispatch* mentions but one operator, the facts were that Miss Bach, the "A" operator who handled the calls, noticed the calling party was agitated, and recognized the numbers for which she was receiving "Don't Answers" as doctors' telephones. She, therefore, called the matter to the attention of Miss Schmidt, evening chief operator, who cut in and inquired if a doctor was desired. On being told that this was the case, Miss Schmidt secured the numbers of nearby physicians and called them.

Miss Dorothy Moore, employed in a jewelry store at Freeport, L. I., discovered a fire in the building, and, seizing the telephone, hurriedly notified "central," after which she hastened to gather up the watches and jewelry in the store and place them in the safe. In the meantime the telephone operator notified the fire department. The firemen responded quickly, and in a jiffy had several streams of water on the fire, which was eventually brought under control. Miss Moore was rescued from the burning building.

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"The Twenty-fifth Anniversary of Telephones in Japan"

"Twenty-five Years of 'Halloa-Halloa'"

THE above heading introduces an article in the December 15, 1915, issue of *Jiji Shimpo*, a newspaper published in Japan, which has just reached us. Roughly translated, the article begins: "'I wish I could go flying to ——' run the words of a Japanese rural song. The present days have brought us an era in which, by a well-known aviator, Niles, and others, the long dreamt fantasy has finally been realized and this piece of song has now become an old tale." The article then goes on to speak of the development of telephony, and says:

"Even in these days we admit there will be nothing that cannot be attained by our knowledge, looking back at the time when telephone was first installed in Tokyo twenty-five years ago it was indeed in infancy at that age. It was to-morrow in 1890 that the first small exchange was installed at Tatsunokuchi (near the Palace) and it falls on its Twenty-fifth Anniversary. Before this, however, telephone instruments were imported by the Department of Communications in November, 1877, but the Government did not think them more than for use from one room to another."

Then follows this interesting narrative of facts:

"Mr. Churyo Ishii, who was the Director of the Central Telegraph Office at that time, reported, after his return from a journey through China, to the Government that the telephone to which they had given little attention *was in practical use in Shanghai* [italics ours], but owing to the civil war the Government could not give any attention nor could they appropriate any money for this enterprise. While they were discussing whether this enterprise might be advantageously undertaken by the Government or a private company, some business men such as Baron Shibusawa were going to establish a private telephone company and sent Mr. Ren Sawai to America in 1877 to study the telephone business. This stirred up the Government authorities and they also sent Dr. S. Oi to America. Unfortunately Mr. Sawai died some years ago, but Dr. Oi is still living in Tokyo. We owe indeed to Dr. Oi for the present development of telephone in Japan. Both Mr. Sawai and Dr. Oi were under instruction of Mr. Carty while in America. The first exchange was leisurely operated by only nine girls, three alternately."

From our editorial viewpoint it is rather an anti-climax to say that the first Japanese exchange was "leisurely operated" after saying that Mr. Sawai and Dr. Oi were "under instruction of Mr. Carty"!

The newspaper also prints a picture of Mr. Carty and of the insignia of the distinctions conferred upon him (as the translator says, "to emphasize the merit of Mr. Carty") accompanied by the phrase, "Mr. Carty, the Benefactor of the Telephone in Japan, and the Orders decorated him by the late Emperor."

On March 31, 1915, the total number of telephones in Japan aggregated 234,484, equivalent to 0.4 telephone per 100 population; at the same date the number of unfilled applications for service was 134,313, as against 132,757 on March 31, 1914.

The Journal of the Communication Association, a monthly magazine published in Japan, devotes considerable space in its issues of November and December, 1915, to the development of the telephone in that country, with pictures of Mr. Carty and Dr. Bell, and high tributes to Mr. Carty. The November issue reproduces Mr. Carty's message to Mr. Y. Riko, Department of Communications, Tokyo:

> To-day I heard speech by our Company's new wireless telephone from New York to San Francisco. I am sure of ultimate success in talking from New York to Tokyo.

And Mr. Riko's reply:

> Beg tender our sincere congratulations upon great achievement which your unceasing and never flinching researches into remote secrecy of science have attained; may you be crowned with further success.

Orators and Oratory as Affected by the Long Distance Telephone

THE Transcontinental Telephone threatens to ruin the whole business of after-dinner speaking by closing to a hard-working class of men opportunities for future triumphs, says the New York *World*. A mechanical joke up till now was good for service at a series of dinners weeks apart, from the Atlantic to the Pacific and home again. With the present mechanical conveniences at every diner's elbow in half a dozen cities, it becomes obsolete in a single night. As a step in the development of the telephone the Transcontinental after-dinner speech or joke is a marvelous achievement. But it makes it necessary for this country to grow ten times as much wit and wisdom for use at banquets as it grew before, or else in despair to give up holding so many banquets and making so many speeches. With a whole nation sitting breathless at the telephone to hear the latest New York joke, what chance is there for a long run in the provinces by the favorite entertainers of our local clubs?

Oratory was once a confined art, says the New York *Evening Post*. The owner of a pair of ears could easily move beyond the range of the most powerful pair of lungs attached to the weakest head. If the diner-out traveled beyond his own town, he could expect to hear orators who were not the very same ones who had poured eloquence upon him at home. But the use of the long-distance telephone at dinners has changed all that. It has extended the range of the orator so that there is no escaping him. Recently the Queens Chamber of Commerce wanted a banker to address their trade dinner. He happened to be in San Francisco. What mattered it? Central arranged the connection and introduced the speaker.

What's in a Shoe?

THE work of Mrs. MacDermott, the graduate nurse of the Benefit Fund Committee, reveals some interesting statistics on the care we take of ourselves. Hundreds of officials and employees, from the lowest to the highest, have learned the way to Mrs. MacDermott's office and have found it the path to vanishing ills.

The question of the care of the feet presents some especially striking results. Mrs. MacDermott says that many employees have come to her with severe pains in the muscles of limbs and ankles, after having already used all sorts of liniments, iodine painting, and other treatment. The cause was found to be fallen arches. About 10 per cent. of all the employees who have come to Mrs. MacDermott for even the slightest ills or for treatment of any kind whatever, have been found to have this trouble with the feet, and are now wearing at Mrs. MacDermott's suggestion a special shoe to remedy this difficulty.

They have all reported to Mrs. MacDermott that the pains have disappeared and that in general they are feeling normal again.

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Remarkable Success of the Transcontinental Telephone Demonstrations at the Panama-Pacific Exposition

MR. GEORGE W. PECK, of the A. T. & T. Co., was sent to San Francisco as Exposition Representative, and a summary of his work and the results attained through the daily demonstrations of transcontinental telephony are embodied in a letter, dated December 1, 1915, which is published below. It is a graphic and almost thrilling narrative, sparkling with enthusiasm, idealism, and loyalty. It is a word picture of what the Bell System is and is to be, and should fire the imagination of every employee who reads it and cause a firmer grip upon the job each one is doing.

By his genial and kindly chats over the Transcontinental Line with strangers in all parts of the country, his invariable good humor, and his able management of the work intrusted to him, Mr. Peck made thousands of friends who have never seen him.

The letter was forwarded to Mr. F. H. Bethell, Vice-President, by Mr. N. C. Kingsbury, Vice-President of the A. T. & T. Co., who wrote:

MY DEAR MR. BETHELL: I am inclosing herewith copy of a letter addressed to Mr. Wilson by Mr. George W. Peck, who represented us so efficiently at the Panama-Pacific International Exposition, as I thought it might be of interest to read Mr. Peck's estimate of the work at the Exposition.

Very truly yours,
N. C. KINGSBURY, *Vice-President.*

Mr. Peck's letter follows:

AMERICAN TELEPHONE & TELEGRAPH COMPANY
PANAMA-PACIFIC INTERNATIONAL EXPOSITION
PALACE OF LIBERAL ARTS
GEORGE WILLIAM PECK
EXPOSITION REPRESENTATIVE

SAN FRANCISCO, CAL., December 1, 1915.

MR. C. H. WILSON, *General Manager,*
American Telephone and Telegraph Company, 15 Dey street, New York, N. Y.

DEAR SIR: Now that the end of the Panama-Pacific Exposition has been reached it might not be amiss if I should briefly sum up a few thoughts which occur to me in connection with our part in the Exposition.

Our demonstrations opened promptly on February 20, and commenced at once and have since been carried through without disaster and with almost unbroken record of the use of the Transcontinental Line at each demonstration.

It is not the purpose of this letter to quote statistics, but with a very few exceptions when total line failure caused us to dismiss the audience without the use of the Line and a few more instances when we were unable to give a demonstration beyond Denver, the Line has been used the entire distance between San Francisco and New York at each demonstration.

These demonstrations have been given uninterruptedly five times a day except Sundays and to the regular demonstrations may be added scores of special demonstrations held principally after 6 P.M. Pacific time.

I have previously confided to you my personal impressions of the great good I believe we have accomplished in many directions, but perhaps dwelt more upon the one of our influence upon the minds of many of the country's famous men, both in public life and business life, who have witnessed our demonstrations and in many instances taken part therein, or who were participants in special demonstrations, especially in connection with State Day demonstrations.

To call attention again to the whole-hearted and I believe sincere expressions of commendation on the part of the Governors, State Senators, Congressmen and other State officials would be to emphasize again the influence for good which I believe has already and will in the future accrue to the Bell System for its wonderful achievement, high-minded attitude, and tireless efforts and aspirations for a still greater Bell System; and I can say again, that I do not believe the calumnies of those who may be against our System or who do not understand us can go unopposed by those who have learned to know us and believe in us.

We have also done more; we have created an atmosphere. We have lodged in many a mind which previously had contained no thought of it the real story of the telephone, its accomplishments and future prospects. We have driven out wrong impressions and substituted the true, and, best of all, we have put truth and friendship in the places of error and unfriendliness. We did all this through the medium of that basic element which must finally be the great leaven which is to make civilization realize its destiny, viz.: education. Unostentatiously, without spectacular acclaim, dignified, but democratic and cordial, day after day the appeal was made to imagination and intelligence as the fascinating story of the birth of the telephone, its evolution and final achievement was unfolded to intensely interested listeners. The people who heard and saw, many of them several times, and spoke of it with pride, represent only in part the total of those who would have come had our auditorium been larger. It is no exaggeration to say that 500,000 would have sought admission if admission had been easily possible at all demonstrations. We will actually have had approximately 200,000 attend and I am certain that "many who came to scoff remained to pray." The cause of it all may be confined to four distinct facts:

First: The appeal to the imagination made by the Transcontinental Telephone Line, superinduced perhaps by the spectacular surroundings of the great Exposition in which it was housed and formed a part. But the mind associated the Atlantic Ocean and the great City of New York as one terminus, and then plains, mountains, deserts, Pacific Ocean, Golden Gate, Sunny California and San Francisco the other terminus, of a panorama made so realistic this year to millions.

Next: The story itself—educational, absorbing; from a novelty to a world necessity, all in a generation, and told lucidly and most interestingly by picture and spoken word.

Next: The revelation of how it was done and who did it. This comprised the increasing toil of the men of the Bell System and their loyalty, integrity, early conception, and constant pursuance of the full measure of a great public trust. No great multi-millionaires have directed the affairs of the telephone industry—no scandal has ever tarnished its escutcheon, for its corporeal life has ever been free from shame and degradation. Its leaders have ever been men of clean lives and clean reputation. How absolutely the telephone has become woven into the whole fabric of daily existence in all its many phases and how scarcely an individual escapes its essential function! How it speaks a common language obliterating race, creed, and distance and welds the great commonwealth of the continent into a homogeneous entity.

Next: The message for the future—How the much that has been accomplished is only a small part of what is to come if the past will be accepted as presaging the future.

My personal experiences and I am sure those of my associates have been satisfactory and congenial, for we have tried worthily to carry out our trust. To all the officials of the Company and to you who made our work so easy by prompt coöperation and abiding faith I offer my sincerest thanks.

Yours truly,
(Signed) G. W. PECK,
Exposition Representative.

Poughkeepsie's Way

OVER and over again come the evidences that nothing is too impossible for an operator to do when a subscriber is depending on her as the only means of assistance in a crisis. Every new example raises the standard a bit higher, but still the operators measure up to it. They step into the breach whenever the subscribers call on them for emergency service.

Sometimes it means simply keeping her head; sometimes it means putting two and two together more quickly than it was ever done before, and finding out by hint and intuition and fragments of a sound what it is the subscriber needs; sometimes it means calling on every ounce of ingenuity and resourcefulness she can muster, to fill those needs; and sometimes—usually—it takes patience and persistence and pluck.

An incident occurred recently, in Poughkeepsie, when Miss Margaret Burr was called upon to use all these faculties, and that she did it and did it well is witnessed by the following letter from the subscriber to Miss Potter, chief operator at Poughkeepsie:

DEAR MISS POTTER:—

On the 12th inst., at noon, I was in immediate need of a doctor's services for my little boy.

At this time also, in Poughkeepsie, a meeting of the Dutchess County Medical Society was in session, making but few doctors available. Who these few were was a question. With absolutely no one to help me I told the operator, whom I found later to be Supervisor No. 2 (Miss Margaret Burr), I must have a doctor. Just how this operator caught what I said in my excited condition, and how she was able to get me a doctor under the above conditions, surely is beyond one outside of such an efficient office. I congratulate you most highly for the very efficient mark reached at the Poughkeepsie office.

With many, many thanks to you and to the employees of the local branch, I am

Sincerely,
MRS. MARGARET HANNAN MARTIN,
No. 15 Fifth ave., Poughkeepsie, N. Y.

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Transcontinental Demonstrations

Transcontinental Telephone Demonstration, New York Alumni Association of Leland Stanford University, Held in Visitors' Club Rooms, Craftsman Building, New York, January 22, 1916

Leland Stanford University Alumni

OVER the Transcontinental Telephone Line New York alumni of Leland Stanford University enjoyed a portion of the inauguration program of Dr. Ray Lyman Wilbur, the new president of Leland Stanford, who succeeded Dr. John Casper Branner on January 22. Members of the New York Alumni Associations of the university gathered in the Visitor's Club Rooms at the Craftsman Building in Thirty-ninth street, New York City, where Mr. J. J. Carty opened the festivities by a roll call of the wire chiefs along the Transcontinental Line. After an exchange of greetings between Mr. Carty and Professor Ryan, vice-president of the American Institute of Electrical Engineers, who paid a glowing tribute to Mr. Carty, President Wilbur was greeted by Mr. Thoreau Cronyn and Mrs. F. S. Hastings, presidents of the Leland Stanford Associations of New York, and by Dr. Story, of the College of the City of New York. President Wilbur read a portion of his inaugural address which he had delivered that afternoon in the chapel at Palo Alto, Cal.

Chancellor David Starr Jordan, of Leland Stanford, conversed with Prof. C. D. Marx, president of the American Society of Civil Engineers, and a number of short talks were held between various prominent members of the audiences at both ends of the line.

"Hail, Stanford, Hail," sung over the Transcontinental Line from New York by Miss Mary Adele Case, evoked enthusiastic applause, and was responded

Transcontinental Telephone Demonstration, Ladies' Night, The Lutheran Society of New York at the Aldine Club, January 25 1916

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to from Palo Alto to the same tune played on the cornet by a student of the university.

The usual program of transcontinental conversations, music, and roll call of wire chiefs was carried out, and to the talk on "The Triumph of Science" was added a synchronized talking motion picture presenting Mr. Thomas A. Watson, who told of his collaboration with Dr. Bell in the early days of telephony.

Lutheran Society

ON January 25, the first anniversary of the opening of the Transcontinental Line, the annual Ladies' Night and Dinner of the Lutheran Society was held at the Aldine Club, New York, and conversations were carried on over the cross-continent wire. Five hundred and seventeen Lutheran pastors and laymen were present.

Dr. John A. W. Haas, president of the Muhlenberg College and presiding officer of the Pennsylvania Lutheran Synod, delivered an address on "Our Country—One and Inseparable." The speaker paid a glowing tribute to the American Telephone and Telegraph Company and associated companies, saying, among other things, that "Neither the railroads nor the larger transportation interests have done as much for this country in making rapid communication possible as has the telephone organization. It is a fine example of what service should be." Dr. Haas asked that all Lutherans do their part to help rather than hinder the big industries and corporations, and stated that during the past twenty years everyone seemed to delight in interfering with big business. "In Heaven's name," exclaimed Dr. Haas, "let us stop this interference with the men of finance who are promoting the best interests of this country."

Conversations and music followed.

At the close of the demonstration President Steinkamp extended the hearty thanks of the Lutheran Society to the A. T. & T. Co. and N. Y. Telephone Co., referring to them as splendid examples of American corporations. He added that too much could not be done for these corporations which are public spirited and which endeavor to take the public into their confidence.

Transcontinental Telephone Demonstration at the 24th Annual Dinner of Cortlandt Hook and Ladder No. 1 at Their Club Rooms, Peekskill, N. Y., January 27, 1916

Retail Lumber Dealers' Association

AT Poughkeepsie, on January 26, the annual banquet of the Retail Lumber Dealers' Association of the State of New York, was held at the Nelson House. Mayor D. W. Wilbur acted as toastmaster. The feature of the affair was a Transcontinental Telephone demonstration, the first occasion, according to the local newspapers, on which the Transcontinental Line has been used from Poughkeepsie. So forcefully did the whole demonstration impress the audience that at its close Mr. C. C. Beahan, of the firm of Crouch & Beahan, of Rochester, and Counsel to the United States Chamber of Commerce, moved an expression of appreciation to the New York Telephone Company and the American Telephone and Telegraph Company, to which the entire gathering responded by a rising vote of thanks for the evening's entertainment. Mayor Wilbur also paid a fine tribute to the Telephone Company.

Cortlandt Hook and Ladder Company of Peekskill

THE Cortlandt Hook and Ladder Company No. 1 of Peekskill enjoyed a demonstration of transcontinental telephony at its twenty-fourth annual dinner at the club rooms of the organization in Peekskill, where 315 prominent members of the Hook and Ladder Company and their guests assembled on the night of January 27.

After addresses by Mr. Leverett F. Crumb, president of the village of Peekskill, on "Our Village," and Hon. Joseph E. Corrigan, City Magistrate of New York, on "Prison Reform," the lecture and moving pictures of the Transcontinental Line were given and the Line opened for conversation across the continent.

A rising vote of thanks was given by the whole gathering (who made their appreciation more emphatic by accompanying it with the locomotive yell of the Cortlandt Hook and Ladder Company) to the A. T. & T. Co., the N. Y. Telephone Company, to Mr. Cortiss, local manager at Peekskill, and a fellow member of the Hook and Ladder Company, and to Mr. W. F. Schmidt.

With the resumption of the formal part of the program, Dr. William Seaman Bainbridge and Hon. Joseph Morchauser, Supreme Court Judge, made brief addresses, the latter paying a

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high tribute to the telephone industry in this country, and saying that he deemed it "a special and most delightful privilege to have participated in this telephone demonstration."

Mr. George E. Briggs, of the *Highland Democrat*, who, with Hon. C. A. Pugsley, Judge Morschauser, Magistrate Corrigan, President Crumb, and others, expressed personal thanks and congratulations after the demonstration, made the remark that "Your motion pictures were most excellent and gripping, and your roll call of wire chiefs showed what a system such as your organization has developed means to this country."

Queens Borough Chamber of Commerce

"PREPAREDNESS" was the main subject of discussion at the fifth annual banquet of the Queens Borough Chamber of Commerce, held at the Waldorf-Astoria Hotel on February 2, where Mayor Mitchel, Hon. Maurice E. Connolley, president of the Borough of Queens, Hon. George W. Perkins, Hon. George B. McAneny, Hon. Henry W. Hodge, Public Service Commissioner, Second District, and Mr. Robert Newton Lynch, vice-president of the San Francisco Chamber of Commerce, were among the guests. The entire assemblage was convinced, by the demonstration of transcontinental telephony which was given, that preparedness in so far as telephone service is concerned is a fact to be relied upon at any and all times.

Mr. C. G. M. Thomas, president of the Queens Borough Chamber of Commerce, and Mr. Seward B. McNear, vice-president of the San Francisco Chamber, exchanged greetings, and Mr. Robert Newton Lynch, vice-president of the San Francisco Chamber of Commerce, who was at the New York end of the line, conversed with Mr. McNear in San Francisco. It was the first time Mr. Lynch had spoken from the New York end, although he had spoken many times from San Francisco to various New York audiences during the past few months.

Mayor Mitchel and Borough President Connolley talked with Hon. George Rainey, secretary to Mayor Rolph of San Francisco, who had expected to take part in the demonstration but was ill in the hospital, where the physicians were enforcing a rigid and severe period of rest.

Mr. Frank A. Vanderlip, president of the National City Bank of New York, spoke from Los Angeles, giving an address on "Business Conditions in the United States after the Termination of the European War." At the opening of his address, Mr. Vanderlip described the vividness of his impressions at using the Transcontinental Line, in the following words:

> I have only within a few hours arrived in Los Angeles after having traversed more than 3,000 miles, passing through fourteen States with their varied climates and conditions, and have been held up by the turbulent Colorado River that was beginning to recede from a flood record, the highest made in thirty years. I have a recent and vivid mental picture of the miles of mountains, desert, of prairies and of fertile farms, over which my voice travels to you. The sensation of speaking to an audience over 3,500 miles away is thus intensified.

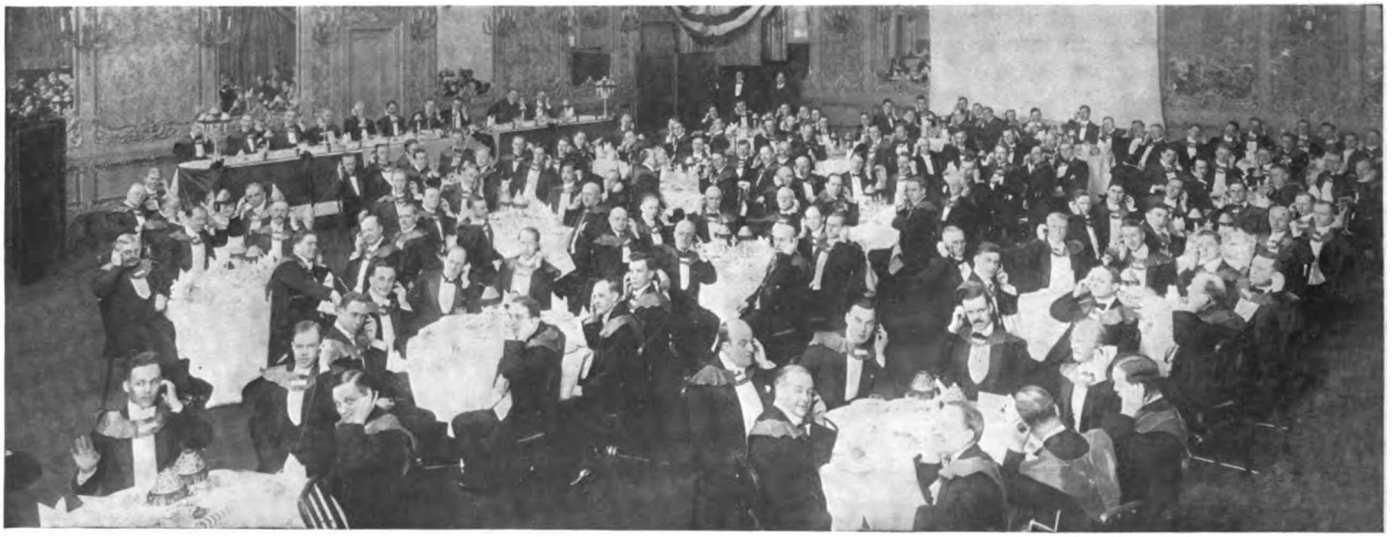
The Line was in use for fifty-five minutes, and the transmission has never been better than it was throughout the period of the demonstration. Mr. Lynch and Mr. Perkins paid high tribute to the telephone organization in their addresses following the transcontinental program, and Mayor Mitchel, Hon. George B. McAneny, Borough President Connolley, Mr. Robert Newton Lynch, Mr. C. G. N. Thomas, Mr. Edward B. Boynton, Mr. H. Morgenthau, Jr., Hon. Frederick E. Crane, Justice of the Supreme Court, and others expressed personally their congratulations to the Company.

Michigan Alumni Association

THE annual dinner of the University of Michigan Club of New York at Delmonico's on February 4 was the occasion of a three-cornered Transcontinental Telephone demonstration in which were joined 225 members of the Michigan Alumni Association in New York, 16 in Ann Arbor, Mich., and 12 in San Francisco. The dinner in New York was given in honor of Dr. H. B. Hutchins, president of Michigan University, who spoke on the "Needs of the University," and urged that the money needed for the erection of the Michigan Union Building be raised as soon as possible. Dr. William McAndrew, associate superintendent of New York City Schools, also made a brief address and the Maori Quartet of students of the university, who had come from Ann Arbor for the occasion, burlesqued the war dances and games of the Maori cannibals.

Addresses and conversations over the Line itself followed the usual lecture and pictures, and the college locomotive yell was given from New York and answered from Ann Arbor. Mr. Wilfred Shaw, secretary of the University, expressed the regrets of President Emeritus James B. Angell, whom illness prevented from taking part in the ceremonies. Mr. Harry G. Gault, president, Michigan Union, made an appeal for the coöperation of all the Alumni in securing the necessary funds for the new building. Another feature of the demonstration was the singing by a male quartet at Ann Arbor of "Yellow and Blue," which was hailed with applause at both edges of the continent, the second verse being picked up by the New York audience and sung by the entire gathering back over the Line to Ann Arbor. The college yell of Michigan was also given by the New York Alumni, and returned from San Francisco.

After the demonstration had closed,



Transcontinental Telephone Demonstration at Annual Dinner of the University of Michigan Club, at Delmonico's, New York, February 4, 1916

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Transcontinental Telephone Demonstration at the 47th Annual Dinner of the Bowdoin Alumni Association at Manhattan Hotel, New York, February 4, 1916

there was prolonged applause for the Telephone Company, and the cheer leader capped it by leading the college yell followed three times with the words "Telephone" and "Casler." Apropos of the telephone demonstration, President Hutchins remarked, "This is the biggest night of my life; I am well repaid for having come to New York."

Bowdoin Alumni Association

AT the forty-seventh annual meeting and dinner of the Bowdoin Alumni Association of New York City, held at the Manhattan Hotel on February 4, a demonstration of the Transcontinental Line was given for the 140 alumni of Bowdoin College who were gathered there. Mr. J. J. Carty was master of ceremonies of the demonstration. Conversations were carried on between a number of Bowdoin alumni in New York and in San Francisco, and Rear Admiral Robert E. Peary, '77, conversed with Mr. H. C. Bates, who was in charge of the demonstration at the Pacific end.

At the request of one of the alumni present, the famous Bowdoin song, "Phi Chi," which was written by Mr. Edwin P. Mitchell, editor of the New York *Sun* and member of the New York Bowdoin Alumni Association, was transmitted over the Line. It was received with delight, and enthusiastic applause came back over the wire from San Francisco.

At the close of the demonstration the audience showed their appreciation of the marvelous powers of transcontinental telephony by cheering and applauding Mr. Carty until he responded by giving a brief outline of what had made possible the achievement.

Following the demonstration came the formal speeches of the evening. Mr. F. H. Bethell spoke on "The Problems of Good Government," touching only briefly on the telephone business.

Real Estate Board of New York

GOVERNOR WHITMAN spoke on "Appropriation Methods" at the Twentieth Annual Banquet of the Real Estate Board of New York, at the Waldorf-Astoria on February 5, when 1,385 people, seated at the banquet in New York, were joined to 500 at the St. Francis Hotel in San Francisco, members of the San Francisco Real Estate Board.

A letter was read from Mayor Mitchel, and short addresses were made by Mr. Haley Fiske, vice-president of the Metropolitan Life Insurance Company, and Dr. Charles A. Richmond, president of Union College.

An address by Mr. N. C. Kingsbury was to have been given before the opening of the Transcontinental Line, but although it was planned that Mr. Kingsbury should be introduced at about 10.10, it was 11 P.M. before the preceding part of the program had been carried out. Mr. Kingsbury therefore omitted his talk and the motion pictures which were to have accompanied it, and proceeded at once to open the Line. Conversations were carried on between Mr. Laurence M. D. McGuire, president of the Real Estate Board of New York, and Mr. Samuel G. Buckbee, president of the Real Estate Board of San Francisco; between Hon. Chas. S. Whitman, Governor of New York, and Hon. Hiram W. Johnson, Governor of California; Corporation Counsel Lamar Hardy, representing Mayor Mitchel, and Hon. Edward Rainey, representing Mayor Rolph; District Attorney Swann of New York County and District Attorney Fickert of San Francisco; Borough President Mathewson representing Comptroller Prendergast, and City Treasurer McDougald of San Francisco; between District Attorney Martin, Bronx, and Adjutant-General C. W. Thomas, Jr., who talked also with Mr. Elisha Sniffin, chairman of the dinner committee; and between Mr. Haley Fiske, vice-president of the Metropolitan Life, and Mr. M. H. deYoung, publisher of the San Francisco *Chronicle*.

Besides the usual solos and victrola selections the sound of the chimes in the Metropolitan tower was transmitted across the continent.

When the Transcontinental program was over, President McGuire asked for a rising expression of thanks to Mr. Kingsbury, the A. T. & T. Co., and the N. Y. Telephone Company, to which the entire assemblage responded not only by rising, but by cheering lustily for several minutes. Three times three should have been added for the plant forces who had made possible the great success of the demonstration by the splendid manner in which they met the peculiar problems presented by this demonstration. The banquet hall was not accessible for wiring until 6.30 P.M., and the fact that the arrangements were completed in time for the banquet, and the peculiar complication of problems in connection with the ringing of the Metropolitan chimes over the wire, were so successfully met, reflects particular credit upon the plant forces under Foreman Aaronson.

RESOLUTION ADOPTED BY THE BOARD OF GOVERNORS OF THE REAL ESTATE BOARD OF NEW YORK, ON TUESDAY, FEBRUARY 8, 1916.

WHEREAS, through the courtesy and coöperation of the New York Telephone Company and the American Telephone and Telegraph Company, the Real Estate Board was enabled, at its twentieth annual banquet held at the Waldorf-Astoria, on the evening of February 5, to hold transcontinental telephonic communication with the Real Estate Board of San Francisco, on which occasion also the eleven hundred guests and diners at the banquet, each supplied with an individual receiver, were enabled to hear the conversations between State and local officials of California and San Francisco and of New York State and City, and officials of the Real Estate Boards,

Resolved, That the Real Estate Board of New York, through its Board of Governors, convey to the New York Telephone Company and the American Telephone and Telegraph Company, its appreciation, not only for making possible this unique demonstration of the progress in the science of telephonic communication, but also for contributing materially to the success of an event which the Real Estate Board is proud to consider the most successful banquet ever held by it, owing in no small degree to the courtesy extended on the part of the Telephone Companies in this very interesting telephone demonstration.

EDW. L. CAMMANN, *Secretary*.

Mendelssohn Glee Club

THE first transcontinental concert was held on February 9, when the Golden Anniversary Dinner of the Mendelssohn Glee Club of New York was held at the Waldorf-Astoria and telephone connection established between the 950 persons present in the grand ballroom of the Waldorf, with 700 members and guests of the Ellis Club of Los Angeles.

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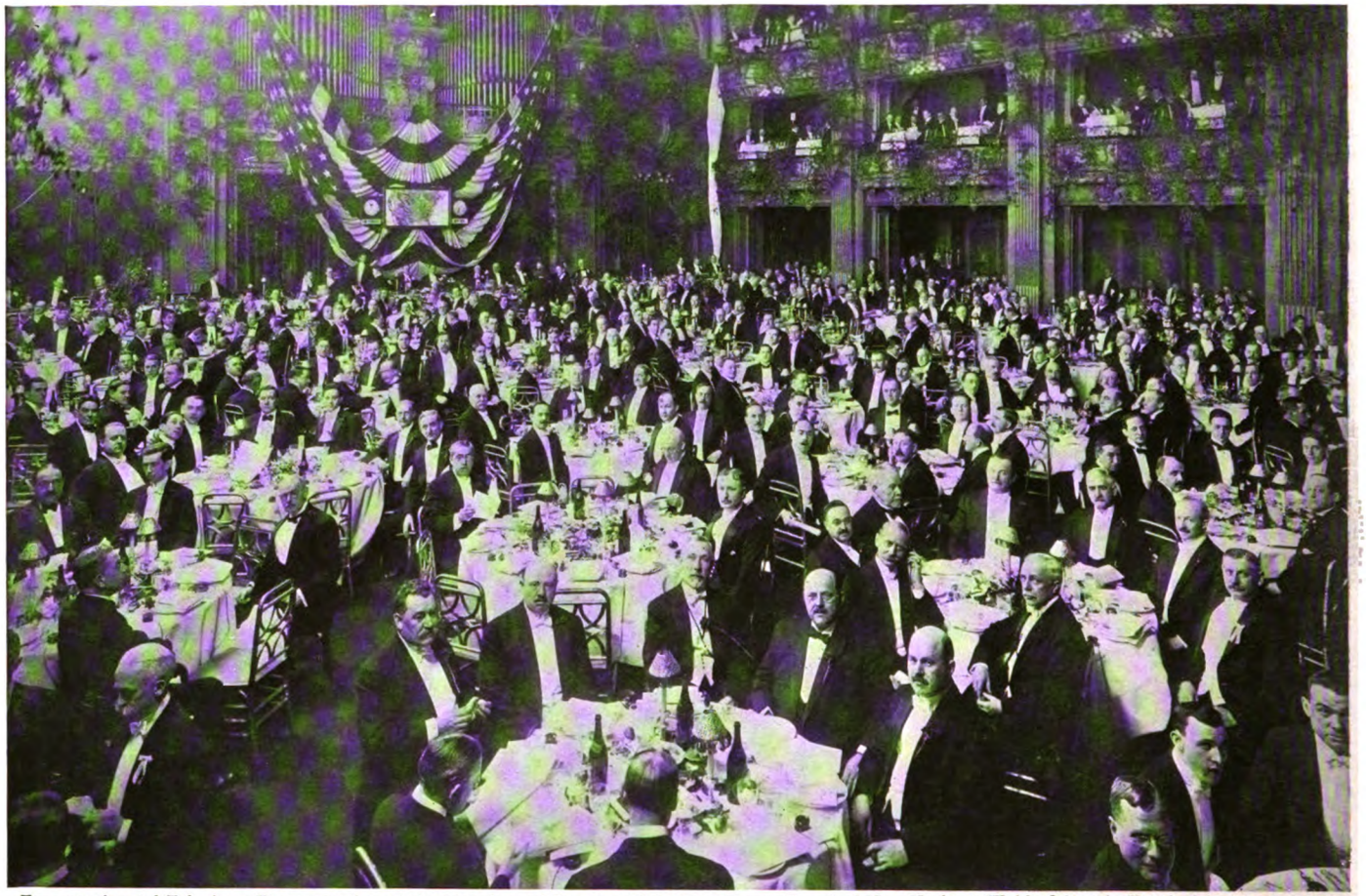

Transcontinental Telephone Demonstration at the 20th Annual Banquet of the Real Estate Board of New York, at Waldorf-Astoria Hotel, February 5, 1916

The Club sang between courses of the dinner, and when the line was opened, after short addresses by Hon. Job E. Hedges and Dr. W. P. Merrill, pastor of the Brick Church, the actual transcontinental concert began with "The Stein Song," sung by the Mendelssohn Club. Mr. Harvey W. Hindermyer sang "Hello,' Frisco," from New York, and was answered by Mr. George Bemis, of Los Angeles, in a solo "Hello, New York." After a conversation between the presidents of the two clubs, Mr. Clifford Lott sang "Israfel" from Los Angeles, and Mr. Frank Croxton responded with "The Two Grenadiers." More conversations followed, between Mr. Hedges and Mr. J. S. Mitchell, president of the Los Angeles Chamber of Commerce, and between Mr. Louis Koemmenich, musical director of the Mendelssohn Club, and Mr. J. B. Poulin, musical director of the Ellis Club. "The Drummer Boy" was sung by Mr. Reed Miller in New York, and "Oh, Golden Sun," by Mr. G. Hayden Jones in Los Angeles, and these were followed by another selection, "The Prayer of Thanksgiving," by the Mendelssohn Glee Club. The voice of the Pacific Ocean also was a feature of this first transcontinental concert, and in this case the audience was particularly appreciative of the long distance transmission, and glad, undoubtedly, that the soloist was not present in the room. After a victrola rendition of "The Star-Spangled Banner," the program was concluded with "The Lost Chord," sung by a chorus of 100 voices in Los Angeles.

Among the guests at this unique concert besides the speakers were Mr. Theodore N. Vail, Mr. U. N. Bethell, Mr. J. S. McCulloh, Mr. Frank Damrosch, Mr. Herbert Witherspoon, Mr. E. C. Bene-

At the other end of the Transcontinental Line, the San Francisco Real Estate Board held its 10th Annual Banquet in telephonic connection with the New York Real Estate Board, February 5, 1916

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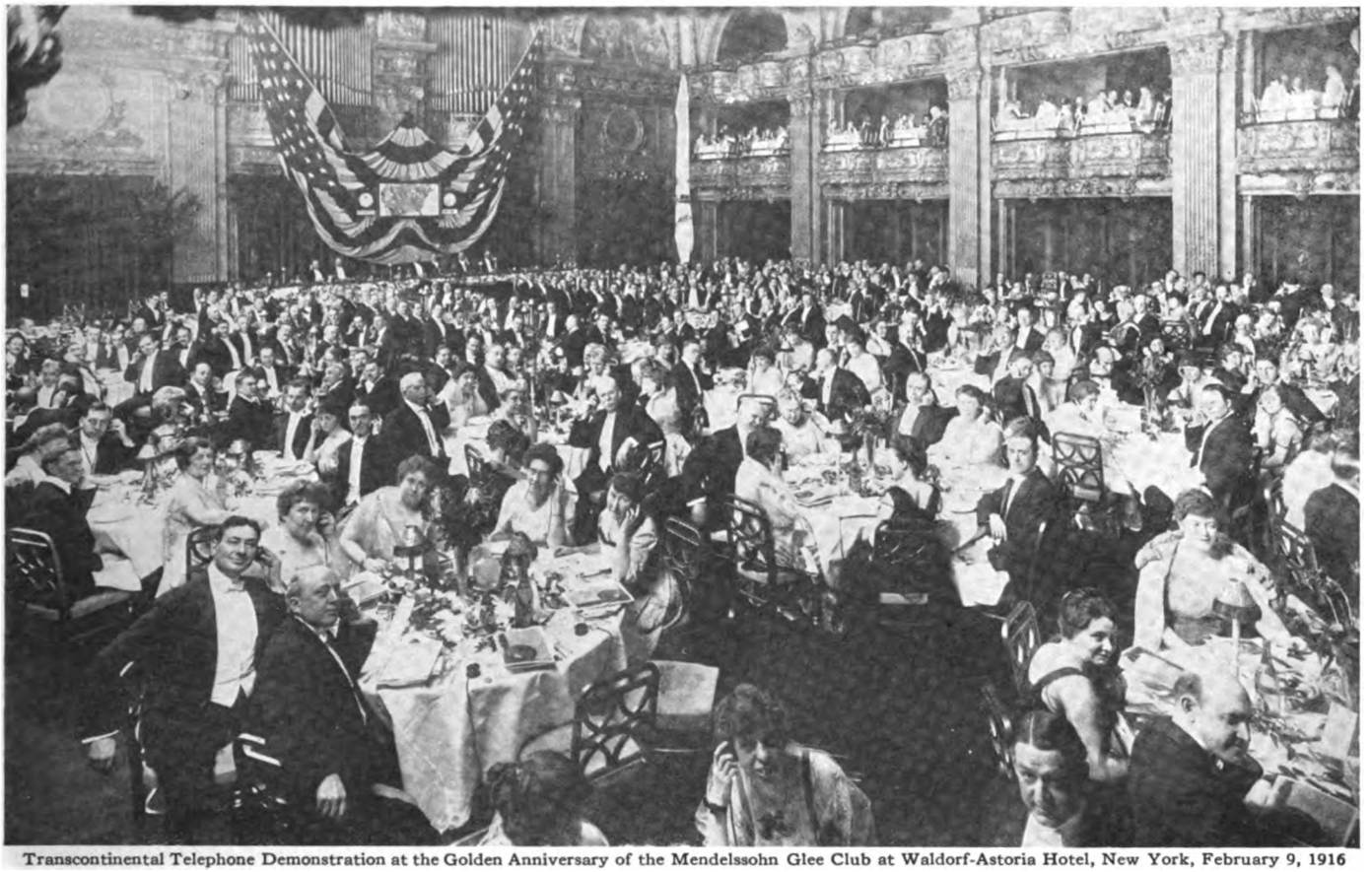

Transcontinental Telephone Demonstration at the Golden Anniversary of the Mendelssohn Glee Club at Waldorf-Astoria Hotel, New York, February 9, 1916

dict, Mr. Arthur D. Woodruff, Mr. R. H. Robertson, and Mr. Alfred Marling.

Williams College Alumni Association

ONE of the largest and most successful transcontinental telephone demonstrations was given at the Waldorf-Astoria, February 11, on the occasion of the annual reunion of the Williams College Alumni Association. Over 650 of the Williams alumni sat down to dinner, and more than 300 guests occupied the boxes. Members and guests alike were provided with telephone receivers so that every person in the room could hear the transcontinental program.

At the conclusion of the dinner Mr. Clark Williams, president of the Alumni Association, introduced Hon. J. Addison Young, Justice of the Supreme Court of New York, and vice-president of the Williams College Alumni Association, as toastmaster for the first part of the program. After a warm tribute to

Transcontinental Telephone Demonstration at the Dinner of the Williams College Alumni Association, Waldorf-Astoria, New York, February 11, 1916

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Transcontinental Telephone Demonstration at the Dinner of the Lincoln Club, Newark, N. J., Washington Hotel, February 12, 1916

Williams College, to its founders and those who have maintained its standards throughout the years, the toastmaster introduced Dr. Harry Garfield, president of Williams, whose remarks on questions of particular moment at the College were greeted with cheers.

After the addresses by Professor Louis Perry, headmaster of Phillips Exeter Academy, and Dr. H. P. Dewey, of Minneapolis, Mr. Francis S. Hutchins took charge of the program, and the telephone features of the evening were introduced.

When the Transcontinental Line was opened, Mr. Dixwell Hewitt, '86, in San Francisco was called for, and spoke with Mr. H. M. Banks, Jr., and with President Garfield, and then the Williams men heard the familiar ring of "The Royal Purple" sung from San Francisco by Harold Parish Williams, '12. The song ended amid a burst of applause in New York, and was answered by a mighty Williams cheer.

The "scene" was changed for a few minutes, from San Francisco to Columbus, Ohio, the home of Dr. Washington Gladden, the author of "The Mountains," alma mater song of Williams College. President Garfield spoke with Dr. Gladden and extended to him the greetings of the alumni. It was Dr. Gladden's eightieth birthday, and in commemoration of this occasion when he was saluted by Williams alumni across half a continent, Dr. Gladden had written another verse of the famous song:

The Berkshires to Sierras send the Williams call,
And Shasta shouts to Greylock while we meet.
For East is East, and West is West, but brothers all,
We're one to-night at Alma Mater's feet.

Back to San Francisco again went the audience, and after more conversations and the usual events of the demonstration, the good night roll call of the wire chiefs pointed to the end of the program. It was not over yet, however, for connection was established with Williamstown, Mass., and ex-President Carter and Professors Hewitt and Russell talked briefly to the audience of their former students.

Lincoln Club of Newark, N. J.

THE nineteenth annual celebration of Lincoln's Birthday by the Lincoln Club of Newark, N. J., took place at the Washington Hotel, Newark, on February 12, and was the occasion of a very successful demonstration of transcontinental telephony.

Addresses were made by Mr. Herbert Thowless, toastmaster, and president of the Lincoln Club; Mr. Thomas L. Raymond, Mayor of Newark; Hon. Martin B. Madden, member of Congress from Illinois; Hon. W. B. McKinley, member of Congress from Illinois, and Rev. George P. Dougherty. Hon. Richard Wayne Parker, member of Congress from New Jersey; Hon. Frederick Lehlbach, member of Congress from New Jersey, and many prominent citizens of Newark, active in her business and political life, were present.

Following the speaking, the usual program of conversations and music was carried on over the Transcontinental Line.

At eleven-thirty Former President William Howard Taft arrived, and, after three cheers from the gathering, Mr. Taft was introduced by Mr. Wollmuth, our local manager at Newark, to Mr. Bates at the other end of the line. Through Mr. Bates, Mr. Taft sent his best wishes to Mayor Rolph, who was ill, and his greetings to the people of California. Mr. Bates responded gracefully, expressing the opinion that Mayor Rolph's recovery would be hastened by the message from Mr. Taft, to which Mr. Taft responded that Mr. Bates ought to enter the diplomatic corps. Mr. Bates assured Mr. Taft that he would be reminded of that when he returned to the White House, whereat the former President asserted that Mr. Bates would be a very aged man before that opportunity was presented. This repartee afforded a great deal of mirth and the entire audience manifested the greatest enjoyment of the fun.

While "The Star-Spangled Banner" was played in San Francisco a picture of Abraham Lincoln was thrown on the screen, and with this appropriate climax the demonstration was brought to an end.

A brief talk by Mr. Taft on "Preparedness" concluded the program.

Ridgewood Masons

FIDELITY Lodge No. 113, F. and A. M., Ridgewood, N. J., held a reception and banquet on the evening of February 16, in connection with which a transcontinental demonstration was enjoyed by more than four hundred

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persons—members and friends of Fidelity Lodge.

Mr. Herbert R. Talbot, Master of Fidelity Lodge, after a graceful address of welcome, introduced Mr. Edward M. Searing, Grand Master, State of New Jersey, who spoke briefly before the Transcontinental Line was opened.

The regular program of the transcontinental demonstration followed.

The Ridgewood audience tried their voices on the great avenue of speech, not individually, at first, but in chorus, as they united in singing "Hello, 'Frisco," their first greeting to the Pacific Coast.

A soprano solo, "Dear San Francisco," was sung from Ridgewood by Mrs. Benjamin D. Hilton. The song, dedicated to Fidelity Lodge, had been especially written for the occasion by Mr. W. F. Schmidt.

In reply to this Mrs. Lucia Lilly Dunham sang "Auld Lang Syne" from San Francisco. After the song she spoke with her mother, Mrs. Lilly, and with her brother. Mrs. Lilly was so affected by hearing her daughter's voice that she could say only a few words.

Mr. Thomas J. Mercer, Past Master Fidelity Lodge of Ridgewood, who is now in San Francisco, spoke to the Ridgewood audience and to Mrs. Mercer. Many other high officers of the Masons and prominent citizens of Ridgewood greeted San Francisco friends.

To the surprise and great interest of the audience in Ridgewood, Mr. James Cornelius, a member of Fidelity Lodge, spoke from Pasadena, Cal., where an audience of twenty people had heard the entire program. Three cheers for Pasadena were given from Ridgewood at this announcement, and in return the people at Pasadena cheered the Ridgewood audience, who heard distinctly.

At the close of the demonstration, great enthusiasm was manifested by the Ridgewood guests, individually and collectively. A vote of thanks was extended to the Telephone Company and to Mr. Casler, expressing the warm appreciation of the Fidelity Lodge for the unique enjoyment of the evening.

Authors Club

LITERARY lights scintillated across the continent on the evening of February 17, when about 160 members and guests of the Authors Club, New York, talked with their friends of the Bohemian Club, San Francisco.

The program of the demonstration was gotten up as an old-fashioned primer and was called "Ye Telephone Primer." "Instructive Questions and Answers" was the legend on the title page, and within was a series of simple questions and amazing answers. Thus:

Q. What is a tel-e-phone?
A. A tel-e-phone is a pair of wires with a thing to speak in and a thing to hear in at each end.
Q. Where is ye Au-thors Club?
A. Ye Au-thors Club is in New York City, a towne which is made up of this Club and sundry o-ther in-ter-ests.
Q. Where is ye Bo-he-mi-an Club?
A. Ye Bo-he-mi-an Club is in San Francis-co, a towne which this Club found-ed and put on ye map.

Then toward the end:

Q. What next?
A. Charles K. Field who ed-its a pa-per Out West will have a rap-id fire rep-ar-tee a-cross the count-ry with Wil-liam George Jor-dan, who used to ed-it ye *Sat-ur-day E-ven-ing Post* and o-ther fun-ny pa-pers.
Q. Will there be no sing-ing to liv-en up things?
A. James How-ard Bridge will sing two verses of ye Au-thors Club song, "Ye Roll-ing World," and the Bo-he-mi-an night-in-gale, Har-ry Per-ry, will re-ply with the o-ther ver-ses.
Q. Who will be ye next speak-er?
A. Ye Pa-ci-fic O-cean will pro-nounce ye ben-e-dic-tion.
Q. What then?
A. Ye will all stand and hear "Ye Star-Spangled Banner" played in San Fran-cis-co. Then we will say "Good Night" a-long the way.
Q. Must we go home af-ter we say "Good Night"?
A. Not if you are hung-ry. You can stay and eat.

On the last page appeared "Lessons in ye Use of ye Voice," beginning with this word of warning:

The boy who shouts with all his might
Must learn such noise is not polite,
If he would use a tel-e-phone
He'd cultivate a pro-per tone.

The Primer ends with:

Children, here is a new noun for you to add to your vo-cab-u-la-ry:

Bo-he-mi-an-tho-pac-a-lan-com-mu-ni-co.

Definition: Boiled down per-son-al-i-ty projec-ted in-stant-ly from Coast to Coast. It means long talk-ing but brief, sav-ing time, mon-ey and en-er-gy. Ye antonym of ye above is illustrated below.

[Insert picture of a man walking.]

This man is walk-ing from ye Au-thors to ye Bo-he-mi-an Club with a message. He will be just 9 months, 22 days, 7 hours, 8 minutes and 35 seconds behind ye tel-e-phone call starting at ye same time.

Besides conversations between various members of the two clubs, and the musical selections described so amusingly on the program, an unprecedented treat was given to the audiences at both ends of the line when Mr. David Bispham sang "Believe Me if All Those Endearing Young Charms." This is perhaps the first time that so great an artist has sung directly over the wire across the continent.

Mr. Henry Holt moved a vote of thanks to the Telephone Company and personal expressions of appreciation and interest were received from Mr. Oscar S. Straus, Dean Carpenter of Columbia, David Bispham, Professor Trent, and others.

Board of Trade of Newark, N. J.

THE following preamble and resolution of the Board of Trade of Newark, N. J., were passed unanimously at a regular meeting attended by approximately 250 members, and are printed here as an expression of the Company's very high appreciation of the generous praise bestowed upon it by the distinguished citizens of Newark composing the Board:

TRANSCONTINENTAL TELEPHONE SERVICE PREAMBLE AND RESOLUTION REPORTED BY A SPECIAL COMMITTEE OF THE BOARD OF TRADE OF THE CITY OF NEWARK, JANUARY 12, 1916

WHEREAS: Through the courtesy of the New York Telephone Company a privilege of an exceptional character was conferred upon the membership of the Board of Trade of the city of Newark in the use of the Transcontinental telephone service between Newark and San Francisco, and

WHEREAS: Several hundred members of the Board of Trade representing the industrial, commercial, and financial interests of Newark availed themselves of the privilege to listen to conversations carried on over this wire between Governor James F. Fielder, of New Jersey; Mayor Thomas L. Raymond, President A. V. Hamburg, of the Board of Trade, and several representative business men on the evening of November 22, with profit as well as pleasure, and

WHEREAS: The New York Telephone Company in its relation with the people of the city of Newark has given continuous proof of its public spirited interest in the helpful promotion of their social and commercial affairs, and by its progressiveness in adopting measures for keeping the telephone service at the highest possible standards, and in its provisions for the welfare of employees and in its fund for their support in cases of sickness, disability or retirement, has by its adherence to principles and ideals of public service won a deserved approbation; be it therefore

Resolved: That the Board of Trade of the city of Newark, in behalf of the people of the city of Newark, express to the New York Telephone Company its appreciation and commendation of the public-spirited policies and practices it maintains and of the able and courteous manner in which it provides a universal, dependable, and progressive service; further

Resolved: That suitable copies of this expression of appreciation be forwarded to the New York Telephone Company and that a proper record of these resolutions be placed in the archives of the Board of Trade of the city of Newark.

Adopted by unanimous vote January 12, 1916.

Richard C. Jenkinson
J. Franklin Fort
Uzal H. McCarter
Franklin Conklin
David Grotta,
Chairman.
} *Committee.*

ATTEST: Jas. M. Reilly, *Secretary.*

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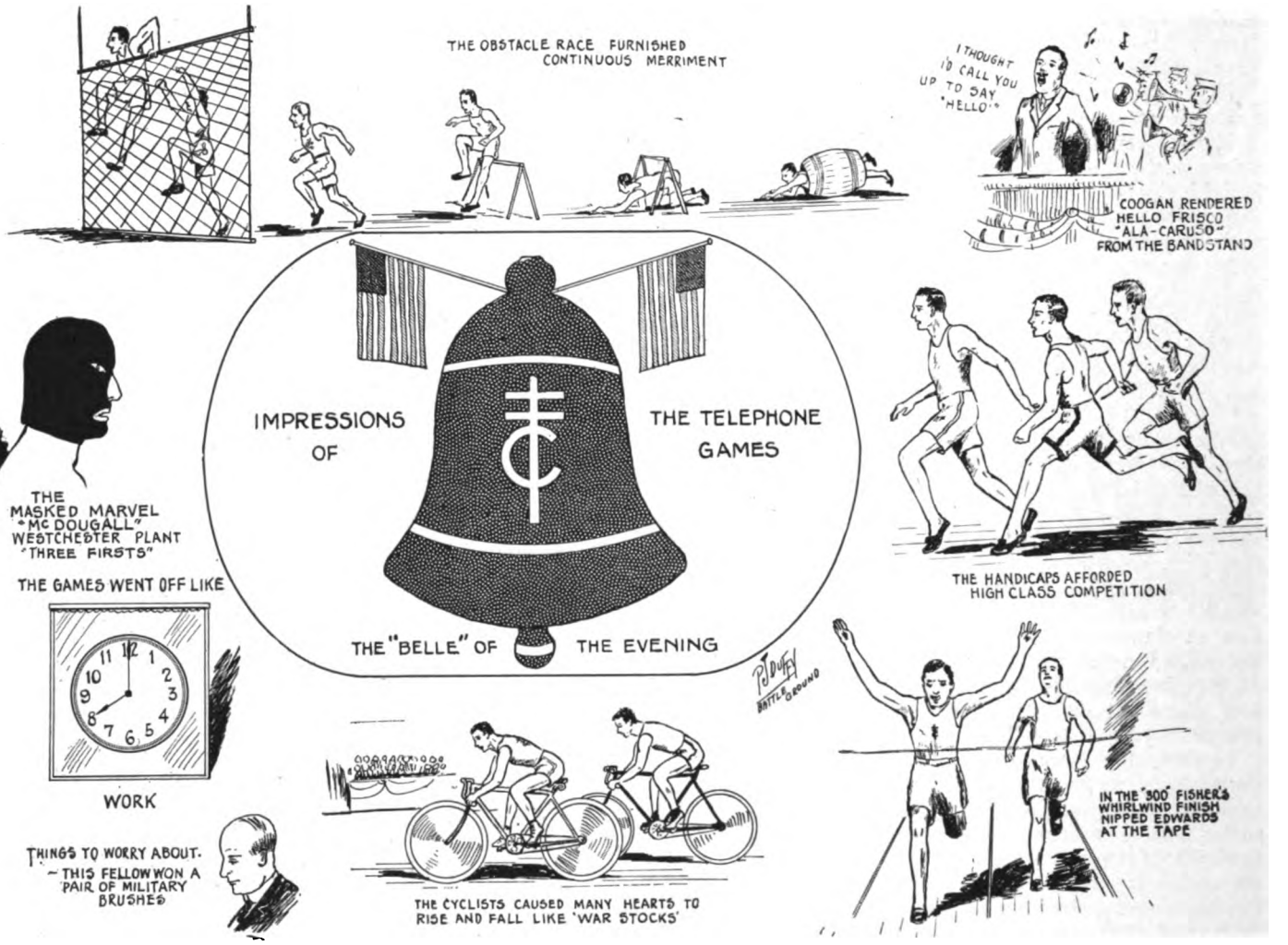
Telephone Athletic Meet

71st Regiment Armory, January 21, 1916



"SAY, d'ja see those two little chaps who say 'Yes, sir' in somebody's office every week day, fight it out for the Rooster Championship of the Metropolitan Division on the big floor of the 71st Regiment Armory Friday night, January 21?

"Some scrap, eh?

"D'ja see Fisher come from behind in the 300-yard dash and win by inches in one of those stirring finishes you read about in the 'red blood' magazines? D'ja notice the way Ruggiero captured the mile run?

"And the stunts of the gym class? You'd hardly have known those men in white trousers and gym shirts were more or less gymnastic greenhorns when Director Moore began work with them last fall.

"And that obstacle race—through barrels, over hurdles, under hurdles, up over a high rope barrier, a dash, a hobble in sacks, a wobble on stilts, and then a run over the finish line.

"D'ja see that interdepartmental relay (say it slowly) 70 yards dash, the tug-of-war, the bike race, and all those other good, well-fought contests?

"That man W. J. Coogan has a real voice, hasn't he, or did you miss hearing him sing 'Hello, 'Frisco,' and respond to encores until the band-leader began to grow weary of waving his baton?"

There was nothing neutral about that crowd of three or four thousand telephone people at the annual indoor athletic games of the Telephone Athletic Association, which were held under the auspices of the Telephone Club and B Company of the 71st Regiment. They were "pros" when it comes to patriotism for country and for company. You know that if you were one of those who stretched his lungs when a great big Telephone Club Blue Bell, surmounted with four American flags, was unveiled and drawn up toward the rafters of the big armory. That "stunt" made a hit and it was only one of a number of hits that were scored during the evening.

The games were easily the most successful ever conducted by the Telephone Athletic Association. Everything went like clockwork. The track and field events, nearly all of them handicap contests, were close and while the scratch men did well, they had their work cut out for them in all except a few instances. From the running of the first trial heat in the 70-yard dash, which opened the games, until the floor was cleared for dancing, the meet was conducted in first-class manner and the officials are to be congratulated. "A fine time was had by all," sums up the report of the evening. If you doubt that statement, ask anybody who was there.

The summaries of the various athletic events are as follows:

70-YARD DASH HANDICAP.

Won by W. F. Lynch, Plant (9 feet), N. J.; F. X. McGowan, Plant (15 feet), N. Y., second; E. A. Mayo, Commercial (10 feet), N. Y., third. Time 7 4/5 seconds.

880-YARD RUN HANDICAP

Won by F. P. Flynn, Plant Accounting (scratch), N. Y.; E. J. Kelly, Plant Accounting (24 yards), N. Y., second; J. G. Patton, Plant (35 yards), N. J., third. Time 2.08.

THREE-QUARTER MILE WALK HANDICAP

Won by J. Gallagher, Plant (scratch), N. Y.; W. Harvey, Empire City Subway (80 yards), N. Y., second; F. W. Mittendorf, Plant (90 yards), N. J., third. Time 5.25.

THREE-MILE BICYCLE RACE, SCRATCH, SPECIAL

Won by L. Gaffney, Commercial, N. Y.; W. Walldner, Company B, 71st Regiment, second; L. Lightfine, Plant, N. Y., third. Time 8.02 1/5.

ONE-LAP SACK RACE, SCRATCH

Won by E. W. Sigler, Plant Accounting, N. Y.; A. J. McLoughlin, Accounting, L. I., second; O. L. Mauritho, Plant, L. I., third. Time 40 3/5 seconds.

300-YARD RUN HANDICAP

Won by W. J. Fisher, Commercial (scratch), L. I.; H. J. Edwards (4 yards), New York, second; B. E. Lewis, Buildings and Supplies (13 yards), N. Y., third. Time 34 4/5 seconds.

ONE-MILE RUN HANDICAP

Won by Frank Ruggiero, Plant, New York, (scratch); W. Goodman, Accounting (65 yards), New York, second; J. Wynne, Plant (150 yards), New York, third. Time 4.53 4/5.

THREE-LEGGED RACE HANDICAP

Won by G. Casey and W. Ahrenholz, Plant, New York; W. Lynch and C. Brady, Plant, New Jersey, second; W. Wagner and H. Edwards, Plant New York, third. Time 8 4/5 seconds.

ONE-LAP OBSTACLE RACE

Won by G. Casey, Plant, New York; A. G. McLaughlin, Accounting, Long Island, second; L. Mauritho, Plant, Long Island, third. Time 1.07.

60-YARD LEAP FROG RELAY RACE.

Won by Accounting, Long Island, consisting of H. White, W. L. Wood, W. Yates, T. Kurz; Plant, New York, second, consisting of A. Munz, T. Grogan, C. Ebel, R. Murphy. Time 20 3/5 seconds.

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ONE-MILE INTERDEPARTMENTAL RELAY RACE

Won by Commercial, New York, with Howe, Mayo, Hart, Dinen, and Fisher. (50 yards.) Second, Plant Accounting, New York, with Edwards, Kelly, Thornton, Northup, and Flynn. (42 yards.) Third, Plant, New York, with Faber, Schneider, Ruggiero, Ahrenholz, and Wagner. (14 yards.) Time 3 minutes 39 4/5 seconds.

PUTTING 12-POUND SHOT HANDICAP

Won by A. McDougall, Plant, Westchester (1 foot), with 43 ft. 8 in.; T. Quigley, Plant, Long Island (3 feet), with 42 ft. 11 in.; C. W. Keegan, Traffic, Long Island (scratch), with 41 ft. 6 1/2 in., third.

TUG-OF-WAR

Won by Plant, Long Island, with A. Geldeon, K. Gelbrandson, O. Nubauer, H. Nelson, and N. Hanson; Plant, New York, with J. Stillwell, W. Grimshaw, P. Griffin, J. A. Anderson, and E. Brown, second; Buildings and Supplies, New York, with P. Kenna, R. Shaw, P. McCarthy, D. Folks, and C. Behringer, third.

SPECIAL TUG-OF-WAR

Plant, Westchester *vs.* Plant, Long Island. Won by Plant, Westchester, with G. Johnson, A. McDougall, A. Lang, H. Hess, and W. Worley.

HAND LINE CONTEST

Won by A. McDougall, Plant, Westchester; J. J. McGuire, Plant, Long Island, second; M. Comerford, Plant, New Jersey, third.

ROOSTER FIGHT

Won by T. Kurz, Accounting, Long Island; W. Yates, Accounting, Long Island, second.

There were 350 individual entries for the fourteen regular events on the program. Ten teams were in the relay race; 10 in the tug-of-war; 12 in the three-legged race, and about 16 in the leap-frog relay.

Tuesday night, February 1, was set aside as "Presentation Night" at the Telephone Club, and the officials of the games and of the club were more than pleased to find that most of the competitors were on hand, whether they were numbered among the victors or the vanquished. The fact that a man had been compelled by circumstances to wait until "next time" to be among the winners didn't keep him away from the gathering, which amply proves that telephone men are good sportsmen.

A special program, featured by numerous selections by the Blue Bell Orchestra, was given. After the prizes had been awarded, Mr. Burch Foraker, president of the Telephone Club, gave the athletes the freedom of the house with full use of all its privileges for the remainder of the evening. Light refreshments were served at 10.30 o'clock.

Other Telephone Club Activities

Billiards

THE first annual handicap billiard tournament in competition for the silver trophy presented by Mr. H. F. Thurber to the Telephone Club has just been finished. The winner of the tournament was Mr. C. W. Olsen, of the Long Island Traffic Department, who played with a handicap of 40 points in 100. Mr. F. T. Brody, of Manhattan and Bronx Traffic, with a handicap of 20 points, was the runner-up. Mr. Olsen's name has been engraved on the cup as the winner for the year 1915, and while the cup remains at the club Mr. Olsen holds the title until the next tournament in the late fall of the present year.

Mr. Thurber presented this cup last fall to be competed for annually in a handicap tournament so that any member of the club who had participated in any billiard tournament would have a fighting chance. The name of the winner each year is to be engraved on the cup and any member winning three tournaments is to acquire permanent possession.

The billiard room at the Telephone Club has as fine an equipment as any in the city, and to keep up the standard a contract has just been let to the Brunswick-Balke-Collender Company to thoroughly overhaul all the tables. Interest in billiards at the club is rapidly growing, and competition for this trophy, so generously donated, has been an important factor in this growth.

Wire Chiefs' Night

THE Manhattan and Bronx Wire Chiefs' force entertained their wives and sweethearts at the Telephone Club on Thursday evening, February 3, 1916.

Dinner was served in the grill from 5.30 P.M. to 7.45 P.M., and 250 guests availed themselves of the opportunity to dine at the club.

The guests were entertained in the gymnasium for a short time with moving pictures of "The Telephone Girl," stereopticon views of some of the supervising force in characteristic poses, and original songs. The song entitled, "Empirical Distribution," made a decided hit.

Following the entertainment, a game of basketball was played between the Wire Chiefs' Force and the Construction Force, which resulted in a score of 26 to 36 in favor of the latter. The game was well played and was greatly appreciated by the fans.

Dancing was started in the assembly room at the close of the entertainment, and continued until 12.30 A.M. An interesting feature of the dance was the Masked Marvels, who, with the aid of the committee, succeeded in separating prominent club members from their unsuspecting wives and sweethearts, much to the amusement of their friends.

During the evening a buffet lunch was served in the grill, and was well patronized.

The best of fellowship existed throughout the evening, and all those present pronounced the affair a decided success.

Indoor Golf

ON Monday evening, February 7, members of the Telephone Club had as their guests at dinner a number of the golfers of the American Telephone & Telegraph Company. After dinner a team match was arranged, about thirty-five men from each company taking part in the competition.

The course consisted of eighteen holes, nine of which were laid out in the assembly room and nine in the gymnasium. The usual number of hazards and nerve-racking obstacles were placed around the course. The match resulted in a victory for the New York Telephone Company players, the score being 105 for New York and 49 for the A. T. & T. Company. The Nassau system of scoring was used.

All contestants report a very enjoyable time and many players expressed a desire to hold future matches, both outdoor and indoor.

New Jersey Plant Night

ON January 27 the facilities of the clubhouse were extended to the New Jersey Plant Force by the officers of the club, and it is generally conceded by all who were present at the entertainment on New Jersey Plant night that the most was made of the opportunity.

The general entertainment of the evening was held in the gymnasium, in which was erected for the first time the complete equipment of the new stage.

The leading feature of the entertainment was a minstrel show, and it was evident that many of the jokes which were used by the "burnt cork artists" had escaped the eye of the censor, as they were no respecters of persons.

It would be an oversight to omit mention of the musical features of the program, both as regards the orchestra and the vocal numbers. The program also provided a number of songs with appropriate words set to familiar airs, in which the general audience took part before and after the general entertainment and during the intermission.

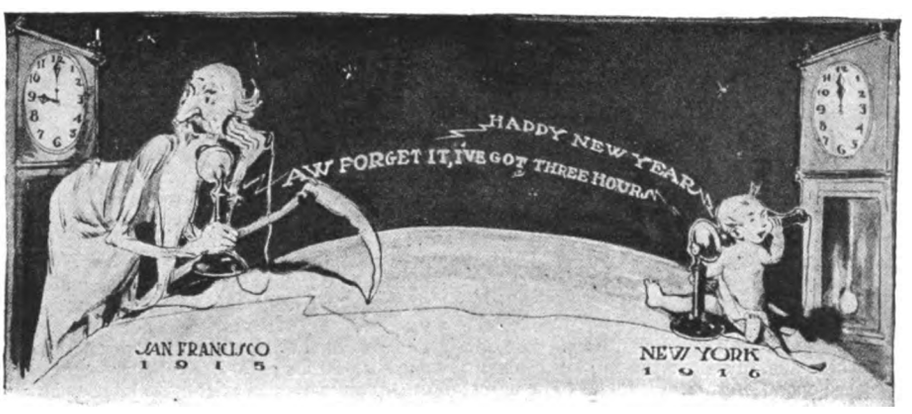
It is of interest from a telephone standpoint that the phenomenon of the speaking or singing arc was successfully demonstrated. The arc lamp for this purpose was suspended directly over the center of the audience and at the appointed time was lowered to a point about midway between the audience and the ceiling, after which the current was switched on, and as the lamp lighted its open flame produced in tones audible to the entire gathering the familiar air of "Silver Threads Among the Gold."

The large gymnasium was filled to capacity. Many came from distant points in Monmouth, Morris, and Bergen counties, which indicates clearly the height to which the enthusiasm ran among the New Jersey Plant boys, many of whom had never before had an opportunity of enjoying the facilities of the club.

Engineers Win Waterbury Trophy

A VERY interesting bowling match took place on Saturday evening, January 22, 1916, at the Subway Alleys, Brooklyn, N. Y., between the forces reporting to Mr. A. C. Thomas, of the Engineering Department, and Mr. A. D. Welch, of the Commercial Department, for possession for another year of the Waterbury trophy.

The possession of this cup has been very closely contested for a number of years and was won last year and again this year by the Engineering Department, the cup defenders defeating the challengers by a margin of 105 pins in a contest of five-men teams for three games, total pins to count.



From the Pacific Telephone Magazine 1915 Talks to 1916

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The TREND of REGULATION

By R. V. Marye, General Attorney

Competitive Theory Exploded

THE Phoenix Water Company applied to the Pennsylvania Public Service Commission for the approval of a contract with the Borough of Phoenix containing the grant of a franchise to operate in said borough. The Philadelphia Gas and Electric Company, which was already operating in the borough, objected. The Commission dismissed the application, stating that the competitive theory in the operation of public utility enterprises has long since been exploded, it being obvious that it involved an economic waste and was inconsistent with the Commission's power of regulation through which the utility already in the field could be compelled to give adequate service at reasonable rates. That, moreover, interest on capital unwisely invested for competition and the additional operating expenses involved therein would add burdens to the community which would ultimately result in an increase of rates.

Discontinuance of Service for Failure of One of Several Users to Pay

THE Pennsylvania Public Service Commission held to be reasonable a rule of the Citizens' Water Company which required that where lavatories in a building were used in common, each tenant should be assessed, that the owner of the building should be liable for water used by unassessed takers, and that the water might be shut off from such common facilities if any assessed taker failed to pay his share of the rent.

Contracts with Municipalities Not Binding Upon the Commission

IN passing upon the application of the Washington County Water Company for authority to issue stock and to put into effect a new schedule of rates, the Maryland Commission held, among other things, that in the exercise of the police power delegated to it by the Legislature it had the right to regulate the rates of a utility, regardless of any contract between it and the municipality in which it operates.

Commission Cannot Fix Rates of One Company on Application of Another

THE Minnesota Railroad and Warehouse Commission, in passing upon the application of the Effington Telephone Company for authority to adopt a flat rate basis of rates and to fix toll rates between certain points, held that it had no power to fix the toll rates between two of the points in question because the lines connecting said points were owned by another company which was not a party to the proceeding.

Municipal Ordinances Reviewable by Public Utilities Commission

THE Supreme Court of Ohio, in City of Cincinnati *vs.* Public Utilities Commission, held that the Public Utilities Commission of that State had jurisdiction to review the requirements of a city ordinance directing a street railway company to construct extensions of its lines, and that the State Commission was authorized to determine whether or not the provisions of such an ordinance were just and reasonable and to relieve the railway company from the operation thereof if found to be unjust or unreasonable.

Lesser Rate by Another Utility in Another City No Proof of Discrimination

ON complaint of William E. Bowker that the United Light, Fuel and Power Company's rates in the City of Coronado were discriminatory, the only evidence offered by complainant was to the effect that the rates of the Consolidated Gas and Electric Company in the City of San Diego were lower than those in Coronado. The commission dismissed the complaint, stating that it was obviously impossible to show that one utility was discriminating merely because another was supplying the same commodity at a lower rate in an entirely different community.

Free Service to Municipality

THE Railroad Commission of California, upon the application of Frank P. Cady and others for an order establishing rates for water in Susanville, decided, among other things, that a contract under which said municipality was receiving free fire protection service was not binding though made prior to the passage of the Public Utilities Act; that the town was neither legally nor equitably entitled to such free service and that hereafter the same must be paid for.

Guarantee of Return as Prerequisite to Extension

IN Haines *vs.* Colorado Springs Light, Heat and Power Company, the Colorado Public Utilities Commission held that the reasonableness of the rules and regulations of gas companies in regard to the extension of their mains must be determined by the peculiar circumstances and facts surrounding each particular case. That a rule requiring a prospective customer to guarantee to use a specified amount of gas as a condition precedent to an extension of mains is not in substance a regulation compelling him to pay for permanent additions to the company's plant, and that hence, before extending its mains to serve a single customer, a company may demand that enough gas be used in three years to cover at least the actual cost of construction where it appears that it is extremely doubtful whether other houses will be built on the line of the extension.

Physical Connection for Long Distance Service

SAM MORRIS, a subscriber of the Citizens' Telephone Company, complained to the Public Utilities Commission of Illinois that said company's system was not connected with the Central Union Telephone Company's system at Havana, Illinois, and that he and his guests, at a summer resort which he managed, were therefore unable to obtain long distance service over the lines of the Central Union Company to Springfield and other parts of the State. The Commission held that neither public convenience nor necessity demanded or required the additional connection sought because Morris and his patrons could reach Springfield and the other points over an existing toll line owned and operated by the Citizens' Telephone Company.

Reinstatement Charge Approved

J. E. WELLS complained to the Public Utilities Commission of Illinois that the Chicago Telephone Company had discontinued his service and refused to restore it until a reinstatement charge of $2 was paid. It appeared that the company had notified Wells of its intention to discontinue unless the amount of his bill was paid and that upon his failure to comply with said notice service had been discontinued by inserting a plug in the jacks serving his telephone so that incoming service could not be given. The Commission held that the company's rule providing for the discontinuance of service in case of nonpayment was reasonable as was also its rule requiring payment of $2 for the reinstatement of service that had been discontinued for non-payment. Further, the Commission states, that the fact that there had been no actual physical severance of complainant's telephone and that he could use it for outgoing calls did not relieve him from the payment of such reinstatement charge since practically the same expense had been incurred by the company as if the instrument had been actually removed, and the failure to remove the instrument had saved the subscriber from the necessity of making a new contract and making a cash deposit as required by the company's rules to insure payment of future bills.

Approval of Equipment by Utility

THE Appellate Division of the Supreme Court, First Department, New York, held in Tisner *vs.* New York Edison Company, that while the provisions of Section 62 of the Transportation Law, if read literally, make it the unqualified duty of an electric utility to furnish current on application, it is nevertheless lawful for the company to make reasonable and safe regulations to assure the safety of the equipment within the building to which current is to be supplied, and to insert in the contract for service a provision to the effect that the equipment of an applicant for service must be approved by the constituted authorities and by the utility before current will be supplied. That it was lawful and reasonable for the company to require the applicant to furnish a certificate of the Board of Fire Underwriters as to the safety and sufficiency of his wiring and equipment, it being immaterial that said Board charged a fee for such certificate, since the company had the right to make its own inspection if it so desired or to determine whose examination and approval would be satisfactory to it, and was moreover entitled to make a reasonable charge if it made the inspection itself.

Impairment of Contracts

THE Railroad Commission of California, in passing upon a complaint of the Town of Sausalito *vs.* Marrin Water and Power Company as to rates charged by the company, held, among other things, that the provisions of the Federal Constitution forbidding the enactment of laws impairing the obligations of contracts have no application to the regulation of public utilities by the States under their police powers, and that all contracts, whether entered into prior or subsequent to the exercise by a State of its power to supervise rates, are subject to such police power.

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Telephone Building
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Western

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Telephone Building
Buffalo

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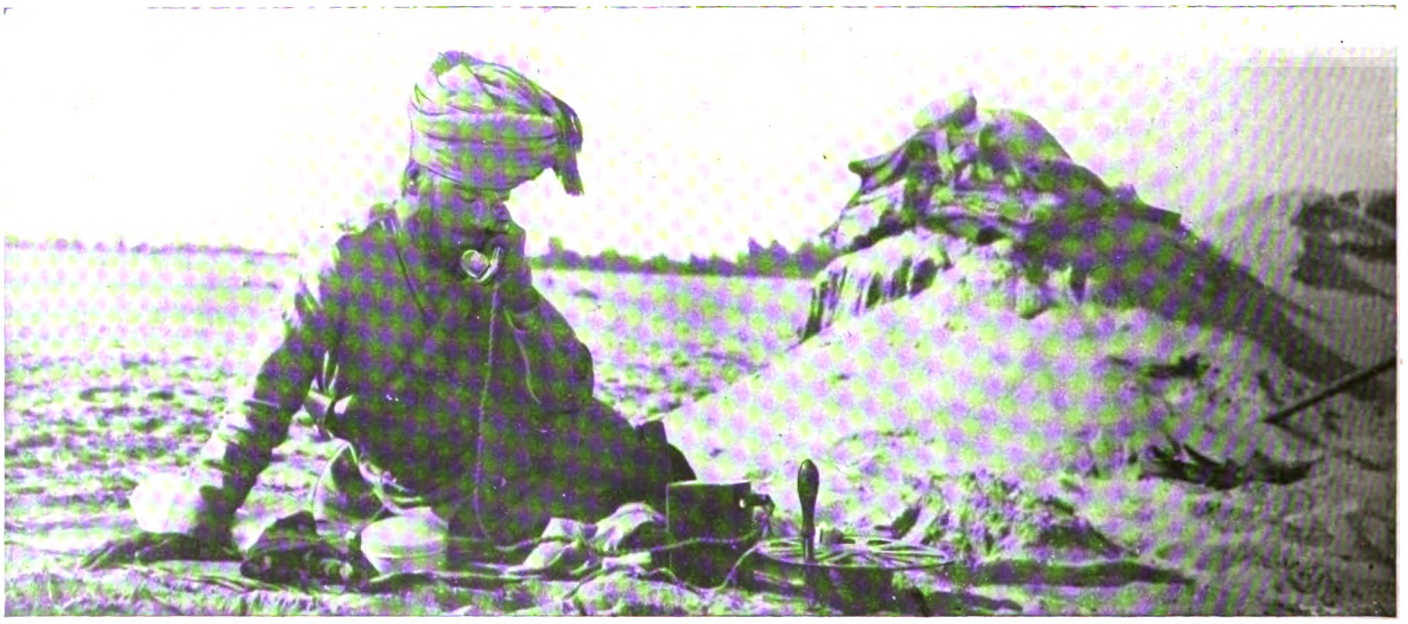
Italian Telephone Post in Carso in Austria on the Drive to Trentino

A French Telephone Station in an Automobile

Juvenile Landsturm in the Gruenwald Using Field Telephone



An Officer of the Indian Contingent of the British Army on the Frontier of Egypt Prepared Against a Threatened Turkish Invasion

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THE TELEPHONE REVIEW

APRIL VOL. NO.
1916 7 4

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I WANT to say for the multitude of people in this vast organization, that we have a wholesome respect for our trade. We like to think of it as a high and noble calling. We like to think that our army of men and women is doing a good work, making the world better, advancing civilization. It is a most exacting work, so exacting that at times we feel like the prisoner of Zenda whose watchful guards never let him fall asleep even for a moment.

Though exacting, it is fascinating—fascinating because each one of us sees the relation of his individual work to the work of every other one in the system, and the essential relation of the whole to all other activities which together with it make up the work of the great pulsating world.

Last—and this is the end—it is satisfying. It is satisfying because through it all there is the spirit of service, than which there is nothing more inspiring and uplifting, because it is manifestly and preëminently of distinct and definite value to mankind, a factor in the advancement of civilization, breaking down the barriers of local prejudice everywhere, and spreading mutual understanding, peace, and brotherhood throughout the world.

U. N. BETHELL.

From his Address before the
National Geographic Society.

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The TELEPHONE REVIEW

New York April 1916

VOLUME 7 NUMBER 4

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

Published monthly by the New York Telephone Company. U. N. BETHELL, President; WALTER BROWN, Secretary and Treasurer. Publication Office and Principal Place of Business, 15 Dey Street, New York.

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VOL. VII. APRIL, 1916 No. 4

Having an Interest

THREE documents have just been issued which every employee should read carefully. They are, in the order of their publication, the Extension of Plan to Aid Employees of Bell System to become Stockholders of the A. T. & T. Co., the Annual Report of the Benefit Fund Committee, and the Annual Report of the A. T. & T. Co.

The first two are exclusively for employees, and the third for the stockholders of the A. T. & T. Co., about one-third of whom, numerically, are employees also.

In a much larger sense than common the employees of the Bell System share in the business—have an interest in it in the double meaning of the word; psychologically, they "have a conscious feeling of concernment" in it as an object, and, financially, all are more or less dependent upon it for their means of livelihood and are participants in the Benefit Fund, while a large percentage of them are also part owners of the business.

Every employee who does not qualify as being interested in the first of these ways does himself a great wrong and is a hindrance to the others and to the Company; more than that, he is an unprofitable servant.

We are all beneficiaries of the Benefit Fund simply by virtue of our being employees; but no one is called upon to become a stockholder—the opportunity is merely offered us.

Happily it has been proved time and again in a thousand ways that Bell System employees possess the spirit and ability equal to the exacting and trying necessities met in rendering public service, but there is more to be done. It is not sufficient to be content with what we are doing.

The Company plans ahead twenty years, to be prepared to meet the opportunities which will arise and the demands which will be made upon the service. It is important that every employee should be prepared likewise. For its employees the Company has done a great deal more than any other employer to make this possible. The three publications just issued tell part of the story.

The Annual Report of the A. T. & T. Co. also holds up the ideal toward which the Bell System is working and which every employee can assist in attaining.

By planning ahead and being prepared, as the Company does, we can do our share.

It can't be done by performing work so heartlessly that we resent every stimulus to effort and complain if others progress while we stand still.

Investing Savings

THE plan to aid employees of the Bell System to become stockholders of the A. T. & T. Co., which was published on January 1, 1915, has been extended so that those who were not eligible at that time but have since completed the required time of service; those who were eligible, but who did not purchase thereunder; and those who are paying for a less number of shares than they are entitled to purchase, might have an opportunity to become part owners of the business on easy terms.

The new offer closed March 31. Announcement will be made later of the number who took advantage of it.

Of approximately 78,500 employees of the Bell System who were eligible under the original plan, nearly 34,000 purchased stock. The fourth quarter ended February 29. Employees who have kept up their payments regularly have paid in for every share subscribed for the total of $24, and have received in dividends $8. Against this there was a charge of $3.82 per share for interest, leaving the equity $28.18 with a balance to pay of $81.82. At the end of another year, on the same basis, there will be paid in $48; received in dividends, $16; interest charges, $6.50; equity, $57.50; balance due, $52.50 per share. The stock will be full paid on this basis November 30, 1918.

The figures printed above show what can be accomplished by the investment of a small amount regularly; it will be noted that it shows more than merely what can be accomplished by the saving of a small amount regularly. The accumulating of money is better than the spending of it, but the profitable use of it is better than the mere accumulation.

The economy and frugality exercised in the expenditure of the Company's funds teaches a valuable lesson in the expenditure of personal funds. Necessity often drives a man to effort, but there is no incentive stronger than seeing a growing bank account, or profits on sound investments made from the savings accumulated by our own efforts.

Kept Away by Telephone

McCORMACK, the most highly paid singer in the world, was scheduled to sing for the Visitation Alumnæ, in the opera house of the Brooklyn Academy of Music, on the night of March 5. It is stated that over 3,000 seats had been sold, including 400 seats on the stage, and it was to have been one of the biggest concerts ever given in Brooklyn, and certainly one of the most profitable. A little after three o'clock that afternoon, with the concert's opening less than five hours away, a telephone message was received by Miss Murtha, president of the Alumnæ, from Mr. McCormack's manager, stating that the famous singer would be unable to sing. "If he sings

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to-night, Dr. McKernon says, he has a good chance of losing his voice forever," his manager explained.

Then followed one of the most dramatic four hours in Brooklyn life [says the Brooklyn *Daily Eagle*], though quite underneath the surface, notifying the 3,000 audience not to come. This was done by telephone, on the "endless chain" principle. Scores of leading committee women were telephoned from the Murtha home; each was asked to notify everyone possible. . . . The telephone campaign was successfully accomplished. The results were wonderful. So many of the ticket buyers were personally notified, so many of the coming audience told, that out of the entire 3,000 much less than 500 went to the Academy.

About Thinking

ALMOST anyone would resent the imputation of being thoughtless. This is something almost no one ever thinks about.

But isn't it true?

Think a moment!

Of course, it doesn't prove you are thoughtless if you never thought about it before; nor does it prove the contrary either.

When you do start thinking about it, though, you become sure you would resent the imputation of being thoughtless, although you never thought about it before.

But perhaps you are thoughtless!

Thoughtless is the opposite of thoughtful.

But one can't be thoughtless all the time about everything, or thoughtful, either; so there must be some qualification.

(*To be continued.*)

Humorists Outdone

SOME of the funniest things that happen over the telephone never get into print, and many of them would scarcely be believed, because they seem more improbable than the most far-fetched jokes of professional humorists. Who would imagine, for instance, that a subscriber could do such a thing as is reported by Miss Gertrude V. Shartell, desk supervisor at Troy. The subscriber called one afternoon and was connected with the chief operator, as she wished to make a complaint. This is what it was:

My telephone was all right in the morning. When I went out at noon I left my mother in the room with the telephone and took the receiver off the hook so she would be sure to hear me when I called this afternoon, but the telephone is out of order now; it seems dead.

It was explained to the subscriber that by leaving the receiver off the hook the telephone had become out of order and it might be necessary to send a man to her residence to hang up the receiver. The subscriber laughed and said she would instruct her dear mother not to leave the receiver off the hook any more, but she thought on account of the receiver being the part which she heard through, it would be much plainer if the receiver was taken off the hook. On taking the matter up with the wire chief it was found that he had tested the line and started a man out to remedy the trouble.

A Forest Hills, L. I., subscriber is reported by Miss M. C. Dayton, chief operator at Richmond Hill, as having asked the operator how much she would have to pay for seventeen days' service at the rate of $35 per month. The question was referred to Miss Parks, evening supervisor, who informed the subscriber that the amount would be $19.83.

It is stated by A. J. Whitney, plant, that the following actually occurred in a Brooklyn school:

TEACHER—How did the people tell the time before clocks and watches were invented?

SCHOLAR—They went to the telephone and asked Central.

Good Work Skillfully Done

ONE day Mr. M. J. Eitelman, chief clerk in the commercial office, Albany, was in Hudson, N. Y., and noticed that our Company's advertisement, "Winning Friends by Telephone," had been clipped from a newspaper and posted in the office of the C. A. Van Deusen Company. Returning to Albany, he sent Mr. Van Deusen an assortment of our educational advertisements printed on cardboard. Mr. Van Deusen replied as follows:

I have been very favorably impressed with the educational advertising which is being done by the New York Telephone Company. This is indeed not only good work, but skillfully done, and I am very sure must produce favorable results. The idea recently emphasized, "The Voice with a Smile," used as if "talking face to face," is one secret of good telephone service. I will be very glad to use the placards you sent.

Another significant comment recently received appeared editorially in the *Greenwich Press:*

If there is any business corporation that could advance the argument that it does not have to advertise, with any sense or reason, it would be a monopoly—one in unchallenged control. Such for instance, as the N. Y. Tel. Co. But this view is not shared by the concern we mention, for its business is conducted by really big men, wise men, whose marked success has been due to things they realize and the other fellows do not. The N. Y. Tel. Co. spends a vast sum of money in newspaper advertising, and its advertisements are not so presented as to solicit business, but are more in the form of telephone service news. Each and every one of them contains information. Hence they are generally read and the indirect results follow—the company gets its money back many times over. In addition to this form of publicity, the corporation issues monthly what is about the best industrial magazine published, THE TELEPHONE REVIEW. From cover to cover it is an educational publication. And by it, too, the results are indirect, but we should imagine very profitable.

British Example

IF anyone had had sufficient temerity a generation ago to suggest that the telephone was a public necessity and should be owned and operated by the Government, he would have been classed as *non compos mentis.*

It was only after the business acumen and inventive genius of the Bell System had covered the country with its vast network of wires and had overcome public apathy as to the inestimable value of the telephone, that any such suggestion was ever made to restrict its further development. The effect of this restraint is seen in every country in the world outside of the United States.

When in 1880 the British High Court declared that the telephone, in law, was a telegraph instrument, thereby establishing the Post Office's monopoly, it was for the purpose of restricting the development of the telephone and preventing it from interfering with the telegraph, and not to promote the development of the telephone. The Post Office even insisted, as in Manchester, on a charge of one shilling for the use of call offices, in order to protect telegraph revenue.

A Wish to "Miss Number Six"

The following is a verse written by an enthusiastic subscriber at Atlantic Highlands, N. J., as an appreciation, to the telephone operator who serves him:

TO help the world's work—*that's* the thing!
And *do you do* it? *"Ev'ry ring!"*
However late the hour, or far
The message speeds—why, *there you are!*
And, somehow, you dispense good cheer
With:—"Number, please!"—'Tis good to hear
Your voice, and manner, sweet and kind,
While you do your share for Mankind!—
(If each of us did *half as well,*
Life would be more like Heaven than—'tis!)
You see, we're somewhat "in a fix,"
But greet you as *"Miss Number Six!"*
And trust you'll get our wish sincere:—
"Health, Wealth and Happiness this Year!"

"The Four-Two-Party-Rs."

Penalty for Delay in Payment

THE Michigan Railroad Commission, on the application of the Citizens' Telephone Company for permission to increase its rates in the City of Lansing, approved an additional charge of 10 per cent. upon customers who failed to pay their bills for telephone service on or before the fifteenth day of the first month of the quarter.

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Henry William Pope

(1877)

Born at Great Barrington, Mass., November 2, 1848.
Died at Bellerose, L. I., February 29, 1916.

MR. POPE began his career as telegraph operator and manager of the American Company at Great Barrington, Mass., at the age of fourteen years, in 1862, succeeding his brothers, Franklin L. and Ralph W. Pope.

Henry W. Pope

In 1864 he was transferred to the main office of the Company in New York and at the time was the youngest and smallest operator then employed. In 1866 he went to Boston as operator, returning to New York in 1868, finally entering the service of the Gold and Stock Telegraph Company, serving as Inspector and Chief Operator of the Private Line Department which operated the Bank Central Exchange System. In 1873 he accepted the position of Assistant Superintendent in charge of construction of the American District Telegraph Company, finally succeeding to the General Superintendency. Mr. Pope was quick to discover the possibilities of the telephone in the spring of 1877, and personally installed the first telephone, and devised and installed the first telephone hook, in the office of Hilbourne L. Roosevelt in New York City. This resulted in the development of the Roosevelt-Cheever combination, afterward acquired by the Bell interests. During his connection with the American District Company he financed and engineered the promotion of the Pittsburgh, Cleveland, and other telephone companies.

In 1879 he accepted the position of General Superintendent of the Bell interests in and about New York City. Upon the merging of Bell and Western Union interests, Mr. Pope was appointed one of the appraisers in the consolidation of the Metropolitan District and became the General Superintendent of the consolidated company, the Metropolitan Telephone and Telegraph Company. Mr. Pope organized the National Bell Telephone Association and presided at its initial convention at Niagara Falls in 1880.

In 1882, agreeable to the request of his former associates in the District Messenger service, he accepted the position of Vice-President and General Manager and became a considerable stockholder, of the Mutual District Messenger Company and placed it on a dividend basis.

In 1885 he entered the field of promoting, engineering, and contracting, constructing a number of railway and electric light plants, among them the Orange, N. J., Crosstown Railway and the first electric lighting corporation in Brooklyn, the Citizens' Electric Illuminating Company, of which he was President.

In 1895 he reëntered the telephone service, engaging with the American Telephone and Telegraph Company and had charge of the early rehabilitation of the Southern Bell Company and became its Traffic Manager, afterward serving a number of years as Acting General Manager of the Bell Company of Buffalo, during which time the plant was almost entirely rebuilt and greatly developed. Mr. Pope also had charge of the American Telephone and Telegraph Company's exhibit at the St. Louis Exposition.

In later years, or until his retirement on account of illness in 1915, he was engaged in special assignments, the development of news transmission by telephone, etc. In 1911 he worked out the scheme and organized the Telephone Pioneers of America, of which he became the Secretary.

Mr. Pope, like his brothers, was widely known in telegraph, telephone, and electric light circles in this country and abroad.

He was a member for many years of the American Institute of Electrical Engineers, the Old Time Telegraphers, Vice-President of the Serial Building Loan and Savings Institution, and a Mason of high degree in all the different bodies.

Mr. Pope is survived by his widow, one son, and two daughters.

THE low percentage of earnings on the value of the plant [5.84 per cent.] and of average distribution to capital represented by securities issued against this plant should convince the most skeptical that under no possible different conditions could the public get cheaper service. Whether they could get better service must be left to the decision of those who have had the opportunity of comparing the service of the Bell System with that of other systems either of this country or of the world.—*From Mr. Vail's Annual Report*, 1915.

All Deserve Credit

NEW YORK, March 6, 1916.

Mr. H. S. Brooks, General Commercial Superintendent.

DEAR SIR: I am inclosing, for your information, a copy of Vice-President Kingsbury's letter of the third instant in relation to the satisfactory results obtained in connection with our exhibit at the Panama-Pacific International Exposition at San Francisco and the transcontinental demonstrations which have taken place.

Please show this letter, or send a copy thereof, to each person in your department who has in any way been instrumental in aiding us in this accomplishment.

Yours truly,
C. H. WILSON,
General Manager.

Enclosure C43058.

Duplicate of this letter sent to F. A. Stevenson, Genl. Supt. Plant, Long Lines, J. L. R. Van Meter, Genl. Supt. Traffic, Long Lines.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY.

NEW YORK, March 3, 1916.

C. H. Wilson, Esq., General Manager.

MY DEAR MR. WILSON: I want you to know some of the comments which have been made on the report recently rendered with respect to the expenditure of money authorized by the Directors for the erection and operation of the exhibit at the Panama-Pacific International Exposition at San Francisco.

Mr. Vail says:

"I think we should congratulate all concerned in this on the wonderful success. It seems almost a miracle that we have had so few interruptions. It was not all luck."

Mr. Bethell says:

"I think everyone who has had anything to do with achieving the splendid results shown in this report should be congratulated. Please note Mr. Vail's indorsement on your letter."

Mr. Marsters says that the report on the transcontinental demonstrations in connection with the Panama-Pacific International Exposition was presented and noted at the Directors' meeting on February 15.

I certainly want to congratulate you all, and all those who have been jointly responsible for this wonderful service. It is a splendid commentary on our organization. And I also want you to be assured that your own wise management and splendid selection of men have had no little to do with this outcome.

Very truly yours,
N. C. KINGSBURY,
Vice-President.

Operators on the Job

MR. TODD, of Terre Haute, Ind., placed a call at Terre Haute for Mrs. Todd in East Orange, N. J., about four o'clock Wednesday afternoon, January 26, but was unable to reach Mrs. Todd. Mr. Todd left Terre Haute at 4.17 on a fast train for New York, which arrives in Indianapolis at 5.40 and was scheduled for a stop-over of five minutes. Upon leaving Terre Haute Mr. Todd requested that, if possible, we have Mrs. Todd on the line at 5.40 so that he might talk with her from Indianapolis during the five minutes' stop-over. At 5.42 Mr. Todd hurried from the train, picked up a receiver in one of the three pay station booths in the depot, and asked the operator who immediately answered his signal: "Have you a call for Mrs. Todd at East Orange, N. J.?" He was immediately greeted by the phrase, "Ready with Mrs. Todd." The conversation lasted one minute, and Mr. Todd again boarded his train for New York.—*From the "Long Lines Traffic Doings" for February.*

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Bell Telephone to Its Stockholders

The A. T. & T. Annual Report for **1915** has been issued. Some of the principal features are as follows:

SUBSCRIBER STATIONS:—

A total of **9,151,221**, an increase of **502,228**, including **109,336** connecting stations. **2,995,321** of the total were operated by connecting companies.

PLACES REACHED:—

The Bell System by its toll lines connects with few exceptions every village or rural community in the United States, and its exchange lines are within the reach of substantially all the residents of rural districts.

The service has been so improved that a majority of all stations can have dependable conversation with each other regardless of distance; and to all connected with the system the telegraph systems of the country are available.

WIRE MILEAGE:—

18,505,545 miles of exchange and toll wire, an increase of **1,029,951**. These figures do not include the wire mileage of connecting companies. Of this total wire mileage, **93%** is copper wire. **10,536,837** miles are underground. The underground conduits represent a cost of **$94,500,000**, and the cables in the conduits **$111,200,000**—a total in underground plant of **$205,700,000**. There are **196,841** miles of phantom circuits in the Bell System, an increase during the year of **7,279** miles. Particular attention is called to the mileage of "phantom circuits," reported this year for the first time.

TRAFFIC:—

26,003,000 completed connections a day, not including connecting companies—at the rate of **8,652,400,000** a year. Calls are excluded which are "busy," "don't answer," or "abandoned"; which are to disconnected lines or lines in trouble; which are from a subscriber reporting that his bell rang, and which are to toll points or are incidental to calls to toll points.

PLANT ADDITIONS:—

$32,863,717 expended for plant additions, and the estimates for **1916** are **$57,000,000**. The total amount expended for plant additions in the past sixteen years was **$729,824,200**. During **1915 $76,060,000** was applied out of revenue to current maintenance and depreciation. The policy of investing the depreciation reserve in revenue-earning plant has continued and the public is getting the advantage of the use of a large amount of plant upon which no dividends or interest charges have to be earned.

EMPLOYEES' BENEFIT FUND:—

Payments aggregating **$1,397,742** have been made during the year to employees or their relatives. In the three years **1913-1915**, inclusive, the expenditures have aggregated **$3,779,896**.

FINANCIAL:—

The gross revenue collected from the public in **1915** for telephone service by the Bell System—not including the connected independent companies—was **$239,900,000**, an increase of over **$13,900,000** over last year. Of this, operation consumed **$84,500,000**; taxes **$13,100,000** or **1.64%** on the outstanding capital; current maintenance **$31,200,000**, and provision for depreciation **$44,900,000**. The surplus available for charges, etc., was **$66,200,000**, of which over **$18,100,000** was paid in interest and **$32,900,000** was paid in dividends.

The capital stock, bonds, and notes payable *outstanding in the hands of the public at the close of the year were* **$796,352,584**. If to this be added the current accounts payable, **$29,039,127**, the total outstanding obligations of every kind were **$825,391,711**, as against which there were liquid assets, cash, and current accounts receivable of **$89,234,955**, leaving **$736,156,756** *as the net permanent capital obligations* of the whole system outstanding in the hands of the public. The physical plants of the Bell System stand on the books of the Companies at **$880,068,520**, as of December **31, 1915**. The appraised cost of reproduction exceeds the book cost by some **$61,000,000**, aside from all intangible values.

The number of shareholders, not including "employee" shareholders, **65,512**, is an increase of **6,097** during the year. **57,580** shareholders held less than **100** shares each. A majority of the Company's shareholders are women.

Over **30,000** employees of the Bell System took advantage of the opportunity to purchase stock of the A. T. & T. Co. at a low price on installments, in **1915**, and the plan has been extended as of March **1,1916.**

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Abstract of the Annual Report of the Bell System

THAT the American Telephone and Telegraph Company and Associated Companies were never as a whole in a more satisfactory position financially, physically, and particularly in their mutual relationship with the public is clearly shown in the annual report of President Theodore N. Vail, just issued.

The Bell System now connects 9,151,221 telephones, a gain of half a million stations in the past year.

The revival of general business is reflected by a growth of 225,300 subscribers' stations in the second half of the year, as against 125,900 during the same period in 1914. The Bell System has been able to respond quickly to the demands made because of its policy of providing plant in advance of requirements. There was $32,863,717 added to plant and real estate last year, and it is estimated that $57,000,000 will be spent in plant additions during the current year.

The gross revenue in 1915 of the Bell System, not including the connecting independent companies, was $239,900,000; an increase of over $13,900,000 over 1915.

During the past eight years the gross earnings have increased $111,300,000, while the assets have increased nearly $445,000,000, with an increase of capital obligations and payables outstanding of only $273,600,000.

As an evidence of the cheapness of telephone service it is shown that net earnings are only 5.84 per cent. of the book value and other assets, and that dividends and interest are only 4.76 per cent. on the plant and other assets, using in both cases the book value, which is less than the appraisal value.

The low percentage of earnings on the value of the plant, and the average distribution to capital represented by securities issued against this plant, should convince the most skeptical that under no possible different conditions could the public get cheaper service. Whether they could get better service must be left to the decision of those who have had the opportunity of comparing the service of the Bell System with that of other systems either of this country or of the world.

In the three years 1913-1915 inclusive the expenditures from the Benefit Funds of the Bell Companies have aggregated $3,779,896. The reserves for this fund are $9,114,329, and during 1915 the payments for pensions, sickness, accident, and death benefits were $1,397,742.

A. T. & T. Co.

THE net earnings of the American Telephone and Telegraph Company for the year were $41,117,487. The interest charges were $6,498,849, and the dividends at the regular rate of 8 per cent. per annum were $29,100,591. Of the resulting balance there was carried to reserves $2,500,000 and to surplus $3,018,046.

The number of stockholders, 65,512, not including the 32,000 "employee" shareholders who are paying for stock out of their wages shows an increase of 6,097. The majority of the company's shareholders are women. The financing for 1916 was taken care of by the sale of $50,000,000 4½ per cent. coupon notes.

The formal opening of the Transcontinental Telephone Line from Boston and New York on the Atlantic seaboard to San Francisco on the Pacific, on January 25, 1915, has been followed by the extension of "extreme distance" transmission into all the States of the Union, and the necessary changes in plant and equipment will be continued to make it possible for any subscriber to talk with any other subscriber regardless of distance. This is being done by smoothing and easing the transmission over the long lines, and therefore necessitates no change in the subscribers' telephone or local line.

By means of radio or wireless telephony the Engineering Department has during the year greatly extended the area over which the tones of the human voice can be transmitted. Speech has been transmitted by wire from New York to Arlington, Va., and thence by wireless to the radio station at Mare Island, Cal. By these new wireless improvements speech has also been transmitted by radio telephony from Arlington to the Eiffel Tower in Paris, and simultaneously to the Hawaiian Islands in the Pacific.

On account of the European war there has been much difficulty in obtaining many of the supplies needed in telephone manufacture, and the Engineering Department has been active in providing substitutes. A new kind of insulating paper for cables, of which some two million miles is used in a year, has been provided, and new sources found for chemicals used in batteries and for the fine hair-like iron used in loading coils.

During the year the Engineering Department has done important and confidential work with representatives of both the Army and the Navy as to new methods of wire and wireless communication, and it has been made clear that the comprehensive wire network of the Bell plant, by a simple plan of cooperation, will supply to the scheme of National defense a working system of communication unequalled by that of any other nation.

Mr. Vail says that the relations of the associated companies with the various boards of control and regulation have been most satisfactory, but that the operations of these bodies should be strictly confined to control and regulation and never invade the province of management.

The Bell Companies have been foremost to establish and propose to continue their efforts to maintain good wages and good working conditions for their employees, a condition of the utmost importance to efficiency of the service to the public. He shows that, since every legal safeguard has been thrown around employees, the combination of employees leading to the suspension of the service and the inconvenience of the public should not be possible. "Such action on the part of the employees of a 'public utility' is as unjustifiable and unpardonable as would be an arbitrary suspension of service by the utility."

Conclusions

IN conclusion he says that the Bell Companies have established good relations between their employees and the public, have passed the danger which arose from a promoting speculative boom and the springing up of unsound duplicating enterprises. Furthermore, the apprehensions that rate-adjusting bodies might bear hard on rates and reduce them to an unprofitable point have not been realized.

Mr. Vail states that:

So long as the policies which now control the companies are followed, so long as there are fair rates and good service, there is little danger of public ownership.

The public are recognizing the fact that in the rates charged for telephone service in the United States there is no exaction, and are beginning to believe that these charges are the cheapest in the world, and the service the best and the total cost to the public is less than it would be under government ownership.

With a reasonably satisfied public; with a reasonably liberal public; with a reasonably inclined federal, State, and municipal control and regulation; without any onerous or unreasonable demands in sight or probable; with a normal business requiring only normal amounts of future capital; with a system sufficiently in advance of existing conditions to meet all possible demands or exigencies; with a business of such a nature that it makes the most economical "servant" for social or commercial intercourse, the first to be employed, the last to be discharged; with an operating staff from office boy to senior executive, from newest to oldest, who look upon the system as their system, who are jealous of its reputation and zealous in support of it; who have a keen interest in its improvement and development; who believe that their success and the Company's success are inseparable, who are never satisfied except with something better and who recognize their obligations to the public—with all these, we should look forward with confidence to the future.

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Third Annual Report of the Employees' Benefit Fund Committee

THE Third Annual Report has been issued by the Employees' Benefit Fund Committee, consisting of Messrs. F. H. Bethell, chairman; H. F. Thurber, Ford Huntington, J. S. Wiley, and J. L. Swayze. Mr. J. S. Kennedy is secretary of the Committee.

The report is as follows:

TO EMPLOYEES:

Herewith is submitted a report for the year ended December 31, 1915, on the administration of the "Plan for Employees' Pensions, Disability Benefits, and Death Benefits" for the New York Telephone Company, The Bell Telephone Company of Pennsylvania, The Chesapeake and Potomac Telephone Company, and their associated companies.

At the end of the year 1915 the number of employees was:

Men	20,105
Women	27,090
Total	47,195

As to Pensions:

The number of employees placed upon the pension rolls is as follows:

	Men	Women
During 1913	15	4
During 1914	40	11
During 1915	8	5

Number remaining on rolls at end of 1915:

	Men	Women
New York Telephone Co.	38	12
The Bell Telephone Company of Pennsylvania	22	7
The Chesapeake and Potomac Telephone Co.	2	1
Total	62	20

As to Accidents:

There has been a gratifying decrease in the number of accidents during the year as compared with former years, showing that the earnest and unceasing work being carried on to reduce accidents has been effectual. During the year, with a larger working force than the previous year, the number of accidents was decreased approximately 16 per cent. The Committee urges continued efforts on the part of heads of departments and employees generally in the prevention of accidents.

The record for the three years is as follows:

1913	2,163
1914	2,343
1915	1,959

These totals, of course, include accidents of every description, and in many cases the employees received first aid treatment but did not lose any time, while in most of the other cases the employee returned to work within a short period. The number of serious cases was small.

As to Sickness:

The number of cases of sickness reported to the Committee during the three years was as follows:

1913	3,318
1914	4,290
1915	5,777

As in the case of accidents, only a very small percentage were of serious nature, the great majority being seasonal diseases, such as la grippe, etc.

As to Deaths:

The number of deaths during the three years was as follows:

1913	84
1914	86
1915	69

General:

Below is a statement of the total amount of payments under the Plan since it was put into effect:

1913	$354,336.57
1914	429,796.00
1915	453,452.32
Total	$1,237,584.89

Following are reports of the certificates of audits of the benefit funds for the year ended December 31, 1915, which were made in accordance with the requirements of the Plan. You will note from these reports that the Companies have made interest payments and maintained the funds as provided in the Plan.

In submitting this report, the Committee wishes to thank the employees for the manner in which they have assisted the Committee in carrying on its work.

Respectfully submitted for the Committee and by its order,

J. S. KENNEDY, *Secretary*,
F. H. BETHELL, *Chairman*.

CERTIFICATE OF AUDIT

15 Dey Street, New York.

To the Employees' Benefit Fund Committee of the New York Telephone Company.

Pursuant to appointment and in accordance with the provisions of the "Plan for Employees' Pensions, Disability Benefits, and Death Benefits," adopted by your Company, effective January 1, 1913 (and amended May 1, 1914), I have audited the "Employees' Benefit Fund" as established and maintained by your Company for the fiscal year ending December 31, 1915, and submit the following report:

EMPLOYEES' BENEFIT FUND
Year 1915

	Amount
Balance in Fund January 1, 1915	$2,000,000.00
Credits during year 1915:	
By Interest at 4%	75,718.45
Additional Appropriations	198,763.18
Total Credits	$2,274,481.63
Disbursements during year 1915:	
For Pensions	$21,962.32
Accident Disability Benefits	32,467.57
Sickness Disability Benefits	175,529.13
Death Benefits	29,813.70
Disability Expenses	15,475.59
Total Debits	$275,248.31
Less Reimbursements from other System Corporations	766.68
Net Debits	$274,481.63
Balance in Fund Dec. 31, 1915	$2,000,000.00

I hereby certify that the credits and disbursements, as above summarized, do, in my judgment, conform to the provisions of the Plan adopted, and that all the disbursements have been authorized by the Committee and receipted for by, or on behalf of, the payees.

S. A. RICHARDSON,
Traveling Auditor for American Telephone and Telegraph Company.
January 31, 1916.

Benefit Funds

THE total amount of all benefits paid from these funds during the year was $1,397,742. This does not include the expenses of administration of the funds nor the general medical supervision and assistance given by some of the companies.

Financial assistance is also given in many cases of illness which do not come wholly within the limitations imposed on the Employees' Benefit Funds. These are chiefly the cases of employees who have been in the service less than two years, or whose illness continues for long periods, or who in other ways are not cared for by the regular system. Plans for systematizing and extending the assistance given in such cases and for giving such medical assistance as will tend to decrease or prevent illness are under consideration at this time.—*From Mr. Vail's Annual Report*, 1915.

Seeking Egyptian Bondage

ON February 4, 5.30 P.M., the following question was asked of a supervisor by a subscriber: "Do they marry people in Egypt?" For a moment the supervisor was nonplussed, then decided that the Egypt to which reference was made was not the land of the Pharaohs, but a suburb of Fairport, near Rochester, N. Y. The anxious inquirer was referred to a local clergyman, who could give information and perform the deed as well.

FLORENCE L. CARDY,
Supervisor, Rochester Toll.

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The Great Submarine Failure

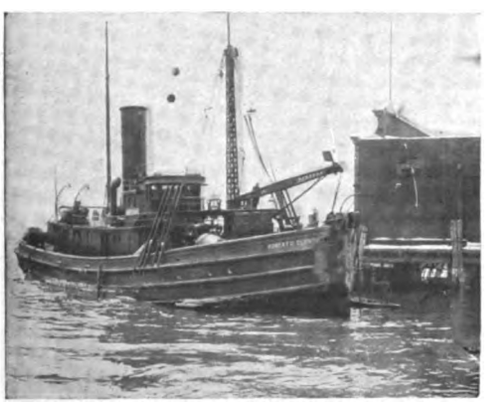
WHEN sailing up the East River, one is impressed with the beauty and symmetry of the Brooklyn Bridge, with its high stone towers and its massive cables tying Brooklyn to New York. Almost everyone knows that under the great bridge lie cables of a different type, on the river bed, tying Brooklyn to New York telephonically. In fact, this is no secret, and pilots and captains have been given the exact locations of these cables. They are shown on the maps of the War Department. Therefore, the supervisors in the Plant Department were surprised on Thursday, March 16, at 7.30 P.M., by a report from the night wire chief that offices in lower Manhattan and parts of Brooklyn had been cut off from communication with one another. No one knew exactly what had happened. This report set the Traffic, Commercial, Equipment, and Construction Departments in motion.

Cable House, Brooklyn Side, Showing Old Junk Outside. City Ash Dump Next to It

Traffic

AT about 7.10 P.M. on March 16, the "A" operators at Manhattan offices noticed that they were unable to get a response from the Brooklyn "B" operators, and vice versa. About the same time an unusual number of guard signals lighted on the "B" boards of offices in both Boroughs, and the "A" operators in the offices received an unusually large number of "don't answers" on calls to offices across the river.

An attempt was immediately made to establish emergency-call circuits, but because of the extent of the trouble this was found impossible. As many calls as possible were passed via the tandem boards, but the tandem boards had lost so large a proportion of their trunks that they were unable to handle the increased volume of traffic.



Submarine Cable Boat Starting to Lay New Cable Friday

The available Plant Department representatives and the emergency bureaus in both divisions were immediately notified, and, when it was learned that a serious cable failure was the cause of the trouble, arrangements were made to notify calling subscribers on delayed calls that there would be an indefinite delay on calls between Brooklyn and Manhattan.

A test of the trunks between Manhattan and Brooklyn was immediately started in all offices, and as soon as this test was completed and the trunks out of order turned down, it was found possible to take care of practically all of the traffic either via direct circuits, or, as in cases where the entire group of trunks or the call circuits had gone out of service, via the tandem boards. In the meantime, the emergency bureaus in both divisions had notified the division superintendents of traffic, district traffic managers, and the division traffic engineers of both divisions.

The division traffic engineer of Manhattan, as soon as he received word of the trouble, hurried from his home in Richmond Hill to the Dey street building and collected such traffic records as would assist in straightening out the trouble. In the meantime it had been decided that the best way to work out the situation was to have the Plant and Traffic Departments cooperate in the Walker-Lispenard Building, where all Plant records would be available. The division plant superintendent and division equipment superintendent of Long Island arriving in one of the Plant Department automobiles, they took the division traffic engineer and the records to the Walker-Lispenard Building.

The division traffic engineer of Long Island was already on his way to the Walker-Lispenard Building and upon his arrival the situation was hastily reviewed with a view to determining what immediate steps were necessary. It was found that about 44 per cent. of the working trunks between Manhattan and Brooklyn, and a large number of calling circuits, were out of service. Arrangements were made for the reëstablishment of all call circuits, and of a few trunks in groups where few or no trunks remained in service.

At that time it was apparent that not enough trunks could be restored to service before morning to handle the traffic, and various emergency methods of handling the traffic were therefore considered. It was finally decided that, by equipping special circuits from Broad, Rector, Cortlandt, John, Beekman, Worth, Franklin, Orchard, Main, Prospect, South, and Hamilton (the trunk groups to and from which were most seriously affected) to special "A" positions at Greenpoint and Williamsburg (the trunk groups to and from which were least affected), calls which could not be passed over the regular trunk groups could be handled on a recording basis. These special circuits and positions were accordingly equipped and proved of great assistance in taking care of the traffic.

Diver Going Down to Examine the Cables Where the Beam Held Them

All chief operators were notified of the trouble during the early hours of the morning and were asked to report for duty at 7.30 A.M., and to have as many extra operators on duty as was possible.

At nine o'clock word was passed to all departments of the Company in Man-

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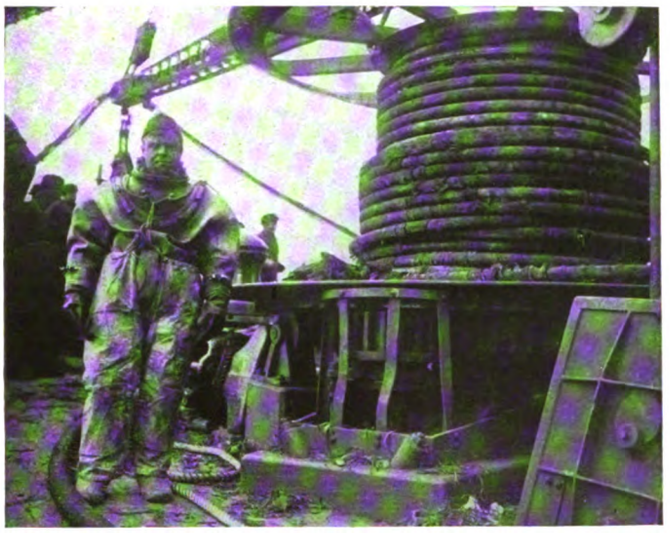


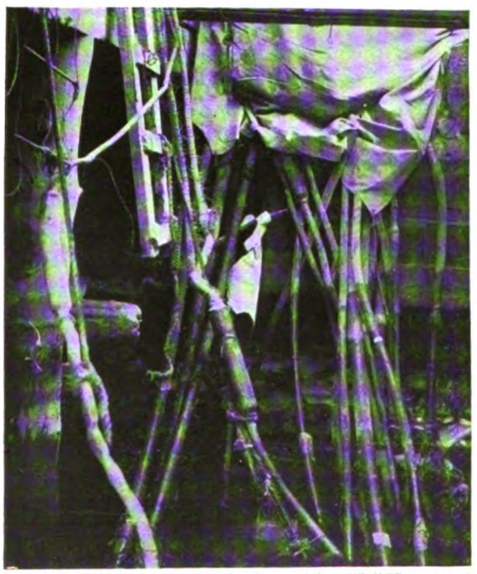
Diver in His Suit. (Chapman Wrecking Company)

On Cable Boat Running the New Submarines

hattan and Brooklyn requesting that employees refrain in so far as possible from making interborough calls since all the lines between the Cortlandt and Main official boards were out of service.

During the morning of March 17 traffic between Manhattan and Brooklyn was handled on an indefinite delay basis, no follow-ups of delayed calls being made except in cases where the calling subscriber stated that it was an emergency call. Most of our subscribers were undoubtedly aware of the conditions because of the publicity which the matter had received in the newspapers, and were very considerate. For this reason the conditions during the busy hours of the morning were abnormal only in that calls between Manhattan and Brooklyn were handled on an indefinite delay basis. After the busy hour, conditions improved considerably and for the remainder of the day traffic between Manhattan and Brooklyn was handled on practically a no-delay basis.

Probably the most impressive part of the whole affair was the way the Plant Department subordinated Plant considerations to the needs of the Traffic Department.



North End of Brooklyn Cable House After "It" Happened

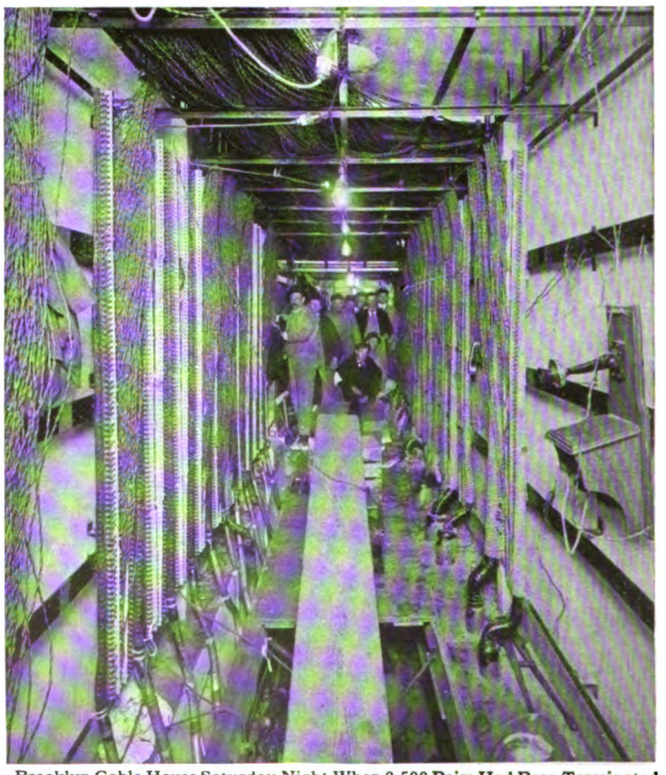
Equipment

AT 7.30 P.M., March 16, the Traffic Emergency Bureau at the Greeley central office received simultaneous reports of trouble on the New York-Brooklyn trunks from a number of offices in Manhattan. A rapid check of the situation was made and it was found that something out of the ordinary had happened. The Plant Department was immediately notified and from the conditions it was apparent that the trouble was in the vicinity of the submarine cable crossing at Pier No. 20, East River. The supervising forces of the Plant and Traffic Departments were immediately notified, and the Plant Department dispatched men to the submarine cable houses on each side of the river to make location tests.

As soon as the extent of the damage was known, a general alarm was sent out to the central office and cable forces in Manhattan and Brooklyn, and by 11.30 P.M., a large number of men had reported for duty at the central offices and submarine cable houses.

Representatives of the Traffic Engineering, Central Office, Cable, and Wiring Forces assembled at 24 Walker street, where all records were available, quickly decided on a plan of action, and with the aid of the Installation Force, who responded promptly, additional telephones were installed at Pier No. 20, and talking circuits were established to the various points affected, so that orders could be transmitted without delay.

It was evident that only a com-



Brooklyn Cable House Saturday Night When 2,500 Pairs Had Been Terminated and Cross Connected. All Potheads and Locknuts on the Left of Picture are New. The Land Cables Are Terminated on the Right Side. These Were Not Disturbed.

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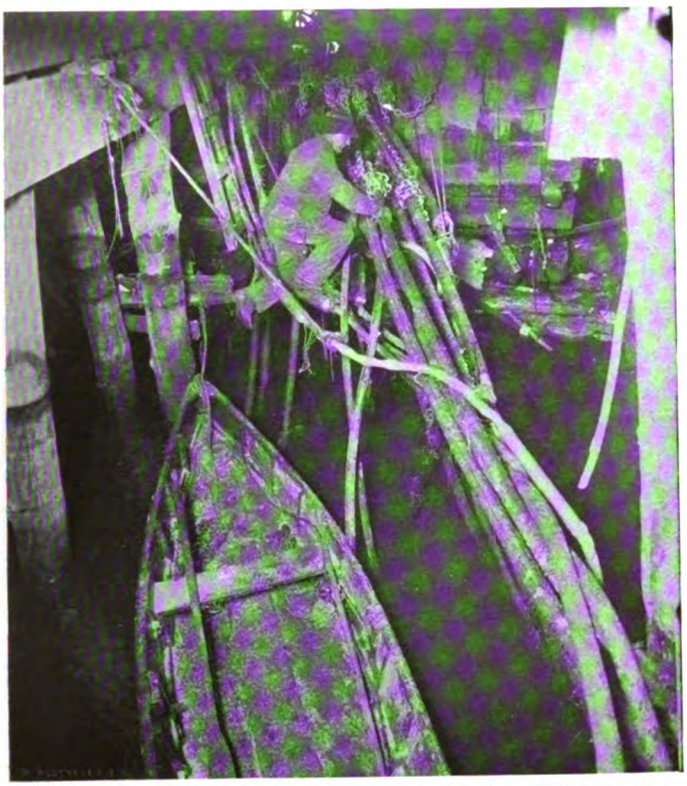
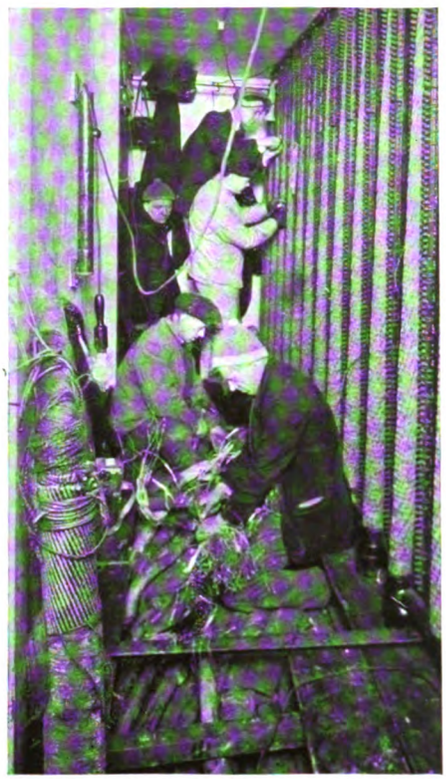


As Ends Were Untangled from the Mass Near the Beam Which Formerly Held Them, They Were Pulled into the Cable House and Chained. This Work Was Done Saturday Night



Splicing in New Submarine Cable at New York End While It Was Being Laid Across the River to the Brooklyn Cable House

paratively small number of the lines could be restored to service by morning, as the number of spare conductors was limited. It was therefore necessary to consider the situation very carefully, in order to use all of the facilities to the best advantage, and the Traffic Engineering Force rendered valuable service by designating the trunks that should first be restored to service. Important telegraph lines, private lines, tandem trunks, and order wires were re-routed through the submarine cable crossings at Pier No. 33 and Pier No. 47, East River, and through spare conductors in direct cables. In some cases, also, working trunks were cut out to establish more important circuits.

Recording circuits were established from southern Manhattan offices to Greenpoint and Williamsburg in order to utilize, to the fullest extent, the Manhattan trunks terminating in these offices.

The first circuit was restored to service at 1.00 A.M., and at 8.00 A.M. all of the available cable conductors had been utilized and the traffic conditions had been greatly improved.

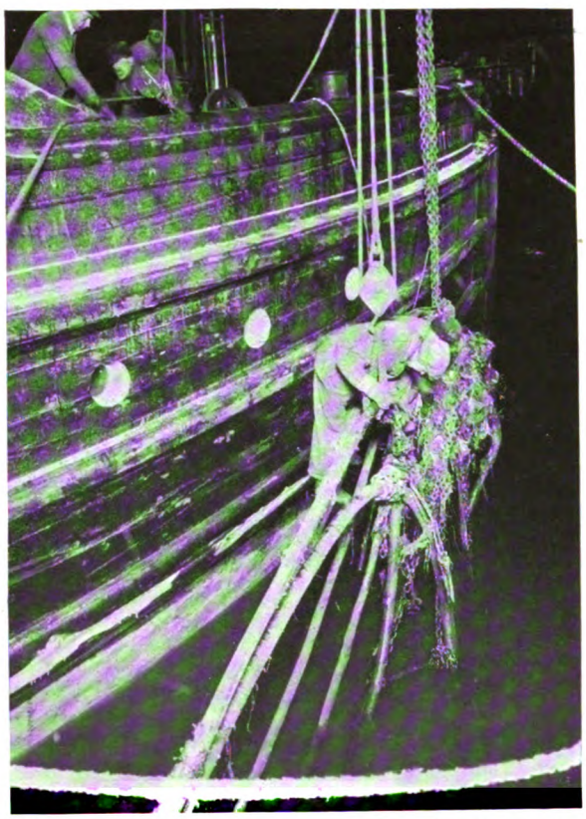
Commercial

PAPERS were notified of the disaster by the Commercial Department early in the evening of March 16, so that the public would understand delays in getting service between the boroughs. As the work of restoration progressed the papers were informed of the progress so that the public would know just what was going on.

Construction

THE Splicing Supervisor of the lower Manhattan district was immediately sent to Pier No. 20, East River, on notice of the trouble. The District Supervisor ordered out men and called for the submarine cable boat of the Western Union Company.

About 9 P.M., members of the Long Island Plant Department reported that the plant in the cable house on the Brooklyn shore, just west of the Brooklyn Bridge, had been practically destroyed. The submarine cables, cross-connecting wires, cross-connecting racks, locknuts, and cleats of all the submarine cables and some of the locknuts and cleats of some of the land cables had been pulled out of the house. In fact, the wires were so mixed up and tangled inside the house that it was impossible to enter it. Men were immediately summoned to the Form Shop and they worked all night making up new pothead forms.



The Tangle of Cables, Chains, and Beam as Pulled Up Saturday Night. The Cables Were Originally Chained to This Beam. It Was Pulled Out into the River About Fifty Feet

The Cause of It All

AN examination of the New York shore showed that two of the cables had been pulled out of their positions and the spiles around which the cables passed had been broken. A large boat was seen in the middle of the river, whose anchor had become entangled in the cables. Pounding on metal was heard and it was supposed that the cables had been cut. It was afterwards learned that the captain had ordered the chain fastening the anchor cut, and the heavy anchor and 180 feet of chain dropped into the river.

The United Fruit Company's steamer *Almirante* had come into the harbor with the tide running out. The pilot had taken her past her pier and endeavored to turn her around before landing. It was reported that he planned to do this without the use of tugboats. He dropped his anchor directly across the submarine cables passing from Pier No. 20 to the Brooklyn dock, and when he raised it the cables from the Brooklyn end were pulled so hard that the large beam holding them on the Brooklyn side

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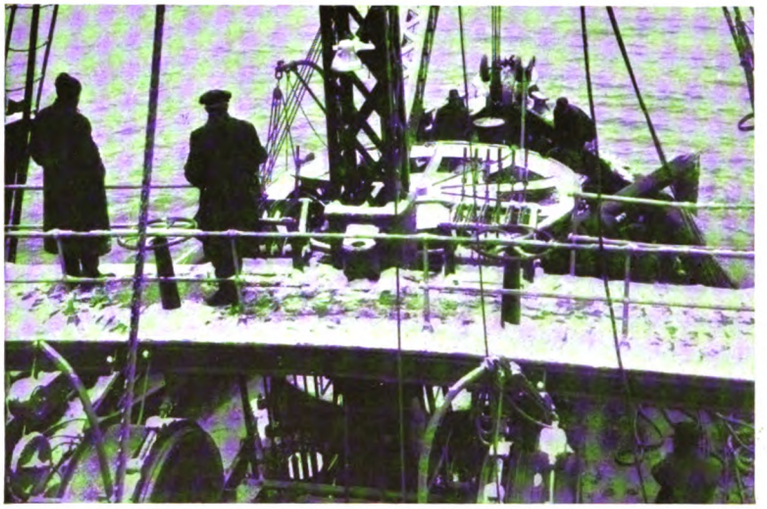
was pulled thirty to forty feet out into the stream. All the cables went with it. This submarine crossing contained 3,500 pairs in seventeen cables of various sizes. There were also three cables belonging to the Mexican Telegraph Company.

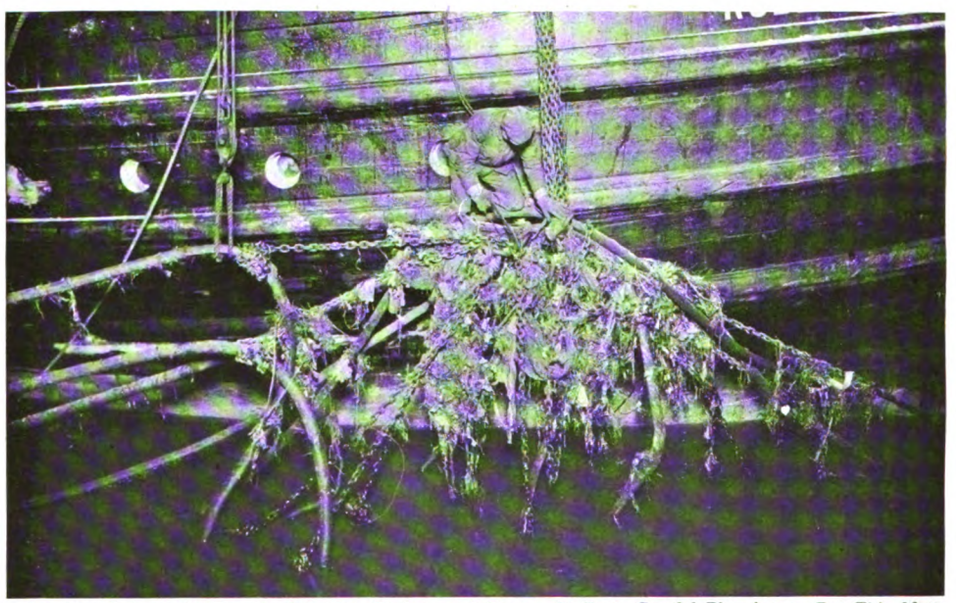


Pulling Up Some of the Damaged Submarines. Note Snow on Boat

Repairing the Damage

AFTER the Brooklyn house was cleaned out it was found that three or four feet of lead sheath on six cables was accessible. These ends were pieced out and terminated. Twelve hundred pairs were made available in this way during Friday and Friday night. A large number of cross-connections had been run, but the small space available in the cable house made it impossible to work a large force. During Saturday other cables were extended so that approximately 2,500 pairs were available by Saturday night, 3,200 pairs by Sunday night, and by Tuesday night practically all pairs were back in service.

When the submarine cable boat reached the dock at the Brooklyn side at one-thirty Friday morning, an attempt was made to pull the cables back into the cable house. It was found impossible to pull one cable without pulling all of them as they seemed to be held by the heavy beam, and the total weight was too great to move. The cable boat was then sent for a stock reel of 300-pair which was immediately run and spliced and cross-connections run. A submarine cable was lying dead in the North River. This was picked up on Friday and run early Saturday morning in two pieces, making a total of 700 pairs of new cable for the crossing. By a test-out on the cables it was found that a number of them were in good condition, but the ends were not accessible from the cable house.



Another View of the Tangle of Cables, Chains, and Beam. It Took Careful Planning to Get This Mass Up So It Could be Untangled Without Pulling the Working Cables Out of the Cable House. They Were Held Only by the Lead Sheathing

It was then decided to take advantage of the low tide to find out the exact condition of the cables near the Brooklyn shore. By untangling the mass near the beam it was believed that the additional good cables could be extended into the house and terminated. A diver from the Chapman Wrecking Company was sent down to examine the cable and reported finding a confused mass of chains, beams, and cables. On account of the fact that the beam had been pulled so far out into the river, where the current was swift, the diver could not work to advantage for any length of time. Another examination was made at the next slack tide and the diver reported that he could attach a rope to one of the ring bolts, but that on account of the complexity of the tangle it was impossible for him to unchain one cable at a time, as had been suggested.

Cables which were terminated and working were held at the Brooklyn shore only by the lead sheath, so great care would have to be exercised in raising the mass so that excessive strain would not come on the shore ends. Wire ropes were lowered to the diver, who placed them through the ring bolt. These ropes were then pulled aboard the cable boat very slowly, by power, in such a direction as to prevent any strain from coming on the land ends. At nine-thirty Saturday night the confused mass shown in the pictures was brought to view above the water. The work of untangling this mass was immediately started, and continued during Saturday night and a good part of Sunday. Additional cables were thus obtained in good condition and these were pulled into the cable house and terminated. The men in the cable house worked in tiers, the wiremen on platforms above the splicers. As soon as enough armor was obtained the cables were securely lashed.

Luncheons were served during the day with hot coffee, and when opportunity offered the men were sent off for rest and a good hot meal. Every effort was made to make the men as comfortable as possible. This was rather difficult, as the temperature began to go lower and lower and the wind was strong and piercing. The cable house on the New York shore was very cold as the thin flooring was directly above the cold, icy water. Tarpaulins used as a covering for this floor afforded some protection for the feet of the men. The space was so small that it was practically impossible to exercise sufficiently to keep warm. Nevertheless, the men worked steadily during the entire period of four or five days and every one was cheerful, endeavoring to do the best work in the smallest amount of time. Everyone realized that service was the main thing to be considered and all worked to that end with devotion akin to patriotism.

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The Telephone in Art Covers

IN order to keep up with what other magazines are doing in the way of art covers, it is very evident that THE TELEPHONE REVIEW will have to continue using the telephone on its covers. We cannot surrender the field when such magazines as *Life*, *The Ladies' Home Journal*, and the *Woman's Home Companion* are presenting such attractive designs as appeared on their recent issues.

It is quite commonplace to refer to the influence which the telephone has had upon business, society, the drama, and literature, but the influence of the telephone on art has been more or less overlooked. This should not be. The truest art is to picture life, and it is but natural therefore that, occupying such an important place in life, the telephone should find its place in art.

Beautiful telephone pictures have been used on covers of other magazines besides THE TELEPHONE REVIEW many times, but three coming together so closely indicates that the illustrators have at last found a new and fertile field.

Our cover this month is typical of Easter, as our December was of Christmas. Santa Claus, as the distributor of general good cheer at Christmas, and the Rabbit, as the distributor of Easter Eggs, have come down from the misty past. This idea was seized upon by Miss Myrtle Coons, who has provided the Easter Rabbit with a telephone as an aid to greater efficiency. Miss Coons, it will be remembered, won the first prize for our Easter cover in the contest among students of the New York School of Fine and Applied Art.

First Aid Did It

ON February 23, 1916, a milkman by the name of Joyce, carrying two bottles of milk, slipped on the icy pavement in getting off his wagon opposite 500 East Fifteenth street, Brooklyn. One of the bottles broke and cut a large irregular gash on the face of his wrist and severed an artery. The blood flowed freely from the wound and Joyce was in danger of bleeding to death.

James Naylon, a splicer's helper, who was on his way to the central office to give his splicer a test, saw the accident and went to the man's assistance. Realizing that quick action was necessary, he placed his thumb over the main artery close to the wound and, holding Joyce's arm in a vertical position, walked him about 500 feet to the manhole where Splicer E. Hamlin was working. With the assistance of the splicer he made a small ball of muslin, applied it to the main artery above the elbow where the seam of the coat sleeve passes, fastened it with a piece of cotton sleeving and tightened the homemade tourniquet with a screwdriver. They succeeded in stopping the flow of blood entirely except for a few occasional drops which were local to the wound. Naylon then went to telephone and on the way met a policeman who called an ambulance.

While Naylon was gone the splicers' supply wagon, in charge of Chauffeur J. J. Murray, arrived, and from the first aid kit, always carried on automobiles in the Long Island Division, proper antiseptic bandages were secured, the wound temporarily dressed and a suitable tourniquet obtained. When the ambulance arrived the surgeon stated that the wound was too serious to treat in the field, and removed Joyce immediately to the hospital, remarking that the first aid treatment rendered saved the man's life, as the job was a remarkably good one and he could not have improved upon it.

On March 1 Joyce was able to leave the hospital and resume work. He met Chauffeur Murray and thanked him for the assistance rendered.

The first aid given this man was carried out in the manner outlined by Dr. Shields in his lecture to telephone employees in the spring of 1914.

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Practical Equipment for Intercommunicating and Exchange Telephone Service

By A. S. Rossborough, Local Commercial Manager, Nyack

Residence of Mr. Otis H. Cutler, Suffern, N. Y., Fully Equipped with Intercommunicating Residence Telephones Which Are a Part of the Universal Bell System

AMONG the Ramapo Hills, in the western part of Rockland County and adjoining the celebrated Tuxedo Park Colony in Orange County, N. Y., are to be found many beautiful country homes and estates. The country home of Mr. Otis H. Cutler is situated just east of the thriving little village of Suffern, N. Y., in Rockland County, and on the main thoroughfare between Nyack and Tuxedo Park.

Mr. Cutler's original telephone service consisted of one line to the Suffern central office with one station in his residence. From time to time additional service became necessary and was added to the original installation. When the total number of stations under this arrangement became awkward to operate without some convenient means of signaling between stations, and without signaling the central office when calls between stations only were desired, Mr. Cutler was induced to install our latest type of intercommunicating residence equipment.

Mr. Cutler's Den, Where the Bell Intercommunicating Station Keeps Him in Touch with the Rest of the House and the World Outside

His new system consists of two lines to the central office and a total of ten stations. Eight of these stations are

The Bell Intercommunicating Telephone in the Guest Room

The Bell Intercommunicating Telephone Is Also in Evidence Here in the Nursery

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The Bell Intercommunicating System Serving the Cutler Stables

The Bell Intercommunicating Station at the Cutler Garage

located in his main residence and one each in the stable and garage. All stations are intercommunicating and all have central office connection with the exception of the stations in the kitchen, servants' hall, and garage. The station in the stable is equipped with a switch to cut out the central office bells when it is not found necessary for the caretaker, whose residence is in the same building, to answer incoming central office calls. The instrument in Mr. Cutler's den is mounted on a specially prepared and finished wedge for use on a flat-top library desk. This den station is also equipped with a special cut-out switch, so that a conversation through the central office may be held without the possibility of anyone's listening in or interrupting by attempting to call the den station when it is in use. The second line to the central office is connected only with the den instrument, which makes it possible for Mr. Cutler to have one line for his personal use for outgoing calls, and leaves the first line available at all times for incoming central office calls and outgoing house service calls. By this arrangement the best possible efficiency is obtained in the use of both central office lines.

In addition to the present working arrangement of the system, the cable layout is so provided and installed as to permit any combination of service desired without additional expense for installation. A sufficient number of spare pairs in the cable were also provided, so that the system can be changed from magneto to common battery in the event of a change of this kind being made in the general exchange system.

Stable and Garage on the Cutler Estate

Three hundred and twenty-nine feet of inside lead-covered cable were installed between the stations in the main house. This cable was neatly concealed between the floors and the wall above the basement. A privately owned six-pair underground cable between the main house and stable, a distance of 260 feet, was removed and a new twenty-one pair cable substituted. New underground conduit and cable were also installed between the stable and garage, a distance of 57 feet. A total of 879 feet of cable was used in the entire installation with an average of 87.9 feet per station.

This is the first system of its kind to be installed in the western section of the Nyack local office district, and as Mr. Cutler is a leader in the adoption of approved conveniences, it is believed that many others will follow.

Editorial Comment on Directories

THE distribution of the New York telephone directory never fails to receive serious and appreciative consideration by the metropolitan newspapers, always in the news columns and frequently on the editorial pages. Sometimes the advent of a new book is hailed with good-natured humor, as will be seen by the following editorial which appeared in the New York *Sun* on the morning of March 7:

HELLO!

Though every sign of nature deny the glorious fact, spring has come. The new telephone directory is out and we may give our frozen social instincts free play, with 27,000 new numbers to talk to. This makes 377,000 listings in all, every one a conjuror's hat of magic possibilities—we had almost said a Pandora's box; but we can always hang up when the troubles begin to fly out, a privilege denied to Pandora, poor girl!

Two exchange districts have been added, "St. Nicholas" and "Academy." For the central girls in the first it will be Christmas all the year. Let us hope that those daughters of good St. Nick will be generous with the right numbers. As for the "Academy" ones, they probably won't feel obliged to substitute any learned forms for the clear and witty brevities, "Number, please," and "Wire's busy."

The Brooklyn *Standard Union* on the same day treated it under the heading "Book Review," with the same lightness of touch, as follows:

BOOK REVIEW

The Telephone Directory just published is destined to be a very popular work among people of all kinds. While there is a certain sameness, from the first chapter to the last, and an absence of thrills and exciting incidents, it is, however, to be commended by not straining after effect, and avoiding long and dreary descriptions of scenery. This work appeals to all classes, and is refreshingly democratic, unbiased and unassuming. All the characters, and there are many thousands of them, are presented by the author in masterly style, and there is no attempt whatever on his part to solve social and other problems. Another notable feature about the work is its utter lack of prejudice. Prohibitionists and saloon-keepers appear side by side, and the reader may select the character which suits him best. All the first families and officers of penal institutions are given the same consideration, and all contribute to the general interest of the reader. Several long chapters are devoted to Brooklyn, and are above criticism. In conclusion it may be said that it is a relief to turn to the Directory after reading a problem novel, and secure a friend to join you in a pleasant evening.

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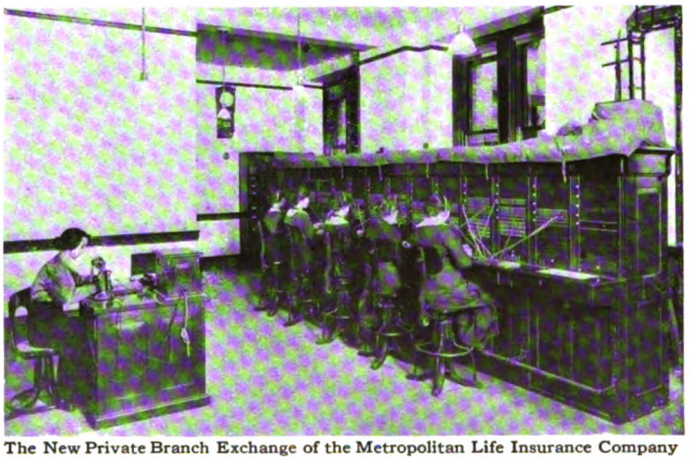
"Show Us," Said the Prospect, and We Did

That's Why the Metropolitan Life Insurance Company Chose Our "P. B. X." Service



The New Private Branch Exchange of the Metropolitan Life Insurance Company

THE recent installation of one of our large private branch exchange systems in the home office of the Metropolitan Life Insurance Company, at No. 1 Madison avenue, illustrates the fact that in telephone service, just as in everything else, the fittest alone survives.

Just about a year ago the daily newspapers announced that the Metropolitan Life Insurance Company was considering the purchase and installation of a large interior telephone system in its home office for interdepartmental use. Special Agent C. W. Nonamaker, of the Murray Hill district, verified the report. He learned that our competitor had submitted a statement of what their system could do, and Mr. Nonamaker asked the privilege of submitting a statement showing the superiority of the Bell equipment and service. The opportunity was granted.

The Traffic Inspection Department made observations of the service required by the insurance company, both incoming and outgoing as well as intercommunicating, and together with the Commercial and Plant Engineering Departments planned the equipment which would meet present needs and be elastic enough to provide for future growth. Each of the departments contributed its knowledge and experience in the solution of the specific problem which confronted the Metropolitan Life, so as to provide it with a telephone system affording the maximum of efficiency at the minimum of cost. The whole proposition was worked out in detail by these experts of the Company who specialize in the scientific study of the requirements of the Company's patrons.

The two statements were referred to the Board of Directors of the company, who decided to compare the two systems in actual operation. A thorough study of the cost of installation and operation, and of the efficiency of the two systems, demonstrated the economy and superiority of the Bell installation and service. Accordingly the company formally notified the New York Telephone Company that our proposition was accepted, stating that they wanted the service that provided the greatest opportunity for increasing the efficiency of its users at reasonable cost, and that on this basis the decision was made in favor of the New York Telephone Company.

Prior to the installation of our system, the Metropolitan Life Insurance Company had a special four-position switchboard, two positions of which were used in connection with an interior system of 301 stations. The other two positions were equipped with twenty trunk lines and 186 extension stations.

The new switchboard is a five-position No. 10 Western Electric lamp switchboard, with present equipment of twenty-three central office trunk lines and 500 extension stations.

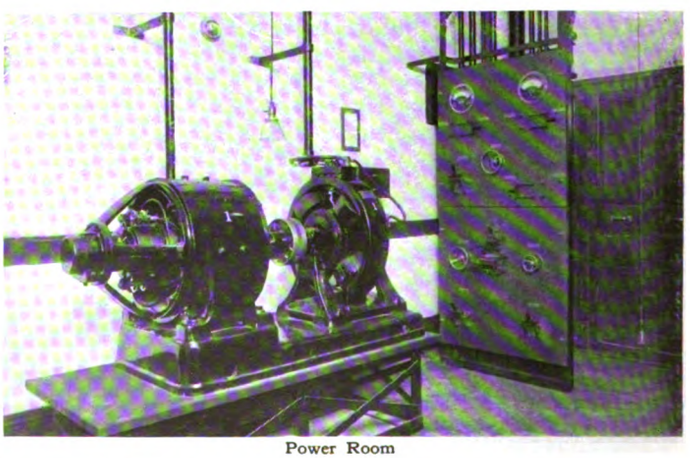
The switchboard was "cut-over" on Saturday, February 5, 1916, at 12.57 P.M., the entire operation taking less than a minute. The transfer was watched by Mr. George H. Gaston, second vice-president; Mr. G. B. Woodward, third vice-president; Mr. James Roberts, secretary; Mr. Dermody, chief electrical engineer, and several department executives of the Metropolitan Life.

Five offices on the fifth floor of the company's building have been converted into telephone quarters. One room is used for the switchboard and chief operator's desk. Another contains the wire chief's desk, the distributing frame, a 5½ horse-power motor generator, a 300 ampere storage battery, and a 75 watt dynamotor ringing machine. The rest of the space is a rest room for the operators and it maintains the high standard of regard for the comfort and welfare of the employees which is characteristic of the Metropolitan Life. It is interesting to note that this room was furnished under the direction of Miss Helen Madden, the new chief operator for the insurance company, who adopted the plan of the Telephone Company's central office rest rooms.

Miss Madden was formerly a supervisor in the Riverside central office and had been with our Company for the past ten years when the Metropolitan Life applied to us for an efficient chief operator to take charge of their new telephone department. She was selected for the place by the manager of traffic inspection.

The day after the new switchboard was installed, a count was taken of the calls sent through the apparatus. It was found that 4,500 messages originated in the home office and nearly 400 came from outside. The busiest periods were from ten to eleven o'clock in the morning and from two to four in the afternoon. In the first named period 755 calls were handled and in the second 1,502.

At the time of the "cut-over" the officials present expressed themselves as being deeply pleased with the new apparatus and were unanimous in the opinion that it would cause a decided improvement in the service. In an interview later with Mr. Nonamaker, Mr. Woodward said that his belief in better service resulting from a more flexible system had been more than justified. He said that he greatly appreciated what the Telephone Company had done for his company and that he was very much impressed by the efficient way in which the telephone men who handled the installation of the equipment attended to every detail of the work.



Power Room

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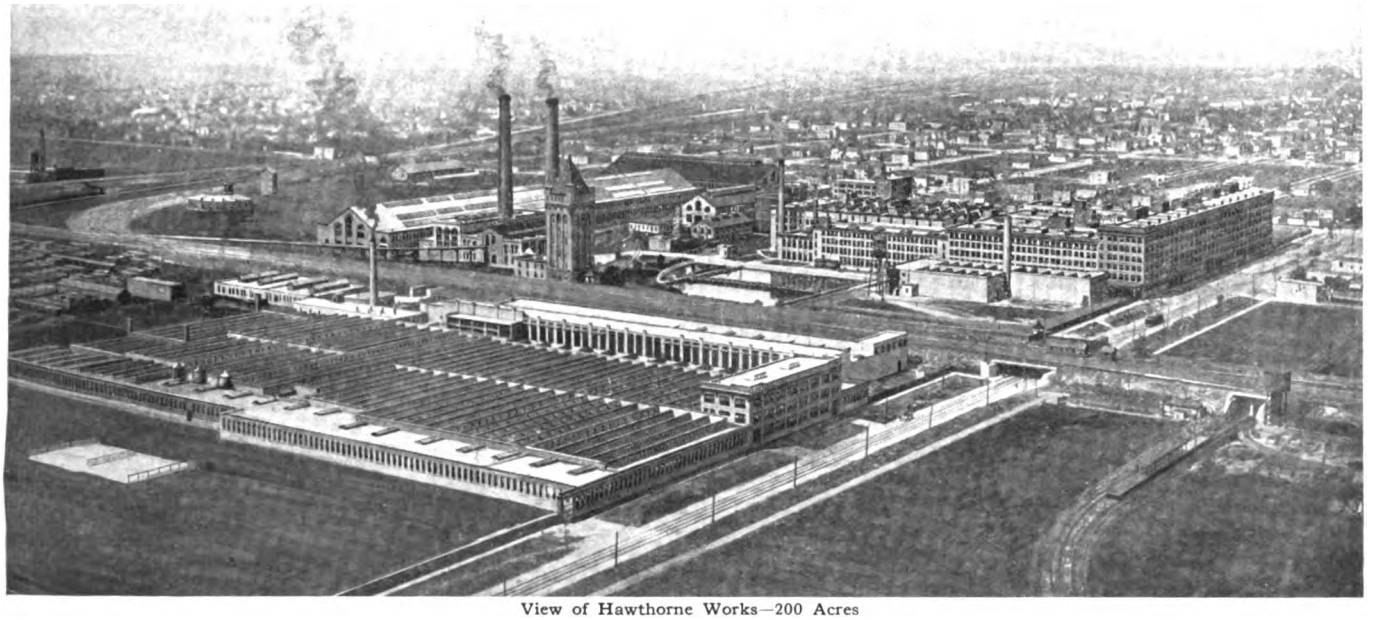
Our Supply Department—Western Electric Company



View of Hawthorne Works—200 Acres

APROPOS of the very illuminating article in THE TELEPHONE REVIEW of March, 1915, describing the retail distribution of supplies through the local storerooms, it may be interesting to trace back toward their source the origin of these materials. To use a military simile, the Western Electric Company is the "base of supplies" for the New York Telephone Company. It maintains a large warehousing service and purchasing organization at 463 West street, New York City, occupying some 130,000 square feet. Here are performed the various functions that form the elements of the supply contract under which the New York Telephone Company has employed the Western Electric Company as its purchasing and supply agent for the last eight years.

In general these functions may be divided into two parts—the purchase and distribution of new material, and the disposition of returned material. To take up the former—first and foremost the Western Electric Company is a manufacturer of telephone equipment, both central office and sub-station. It was appointed the official manufacturer of telephone equipment for the Bell System in the interests of standardization and to facilitate the control of quality. For the same reasons it installs all central office equipment for the Bell companies. We find therefore at the New York house of the Western Electric Company a resident General Foreman of Installation to whom reports a gang of foremen and installers of from 200 to 400 men, depending on the size and activity of the switchboard schedule. Switchboards, except those of the small private branch exchange type, are of course built to order, but of all the other kinds of telephone equipment—sub-station, protective, etc.—ample stock is carried by the Western Electric Company to serve the needs of the Telephone Company. Perhaps a word here as to the methods and organization required to maintain this and the other stocks to be discussed later will be timely.

Distributing Department

THE New York house of the Western Electric Company is a part of what is called the Distributing Department of the Company. The representative of this department at New York is the manager of the New York house—Mr. E. P. Clifford. To him reports, among others, a Stores Manager, Mr. R. Gordon, whose particular duty is the supervision of the operation of the supply contract. Primarily, of course, this is a question of service, the sales problem having been eliminated by the execution of the contract, and service in this contract relation means the prompt and correct delivery of supplies. To the Stores Manager report various sub-divisions, six in number, and these are briefly described below.

(a) The Warehouse

A comprehensive stock of the regularly required articles must be carried—and this stock must be very complete, for it is seldom that "something just as good" may be substituted for the article ordered. There is, therefore, a modern warehouse occupying about 115,000 square feet. Much time and thought, both on the part of the New York Stores Manager and his staff, and of the corps of trained experts maintained by the general organization of the Western Electric Company as advisers to all its distributing houses, have been devoted to the laying out of the plan of this warehouse to get an efficient, facile operation. Some of the modern methods, equipment, and arrangements employed are shown in the accompanying illustrations. The operation of this warehouse is in the hands of an expert who has seen considerable service with the telephone companies, so that he appreciates their needs more keenly perhaps than might another who had been only on "one side of the fence."

(b) The Stock Maintenance Division

But the operation of this warehouse has nothing to do directly with the purchase at the proper times of supplies to fill its racks. This work is in the hands of a Stock Maintenance Division. This division poses continually on the horns of a dilemma. It must at all times have a stock of all standard articles

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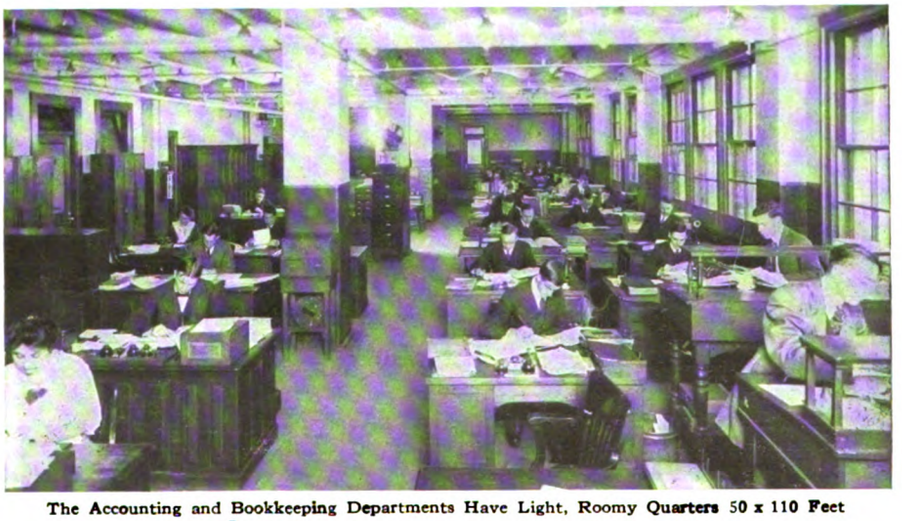
Stock Maintenance and Service Department, Record Room to the Right, 63 x 98 Feet

The Local Buying Department



The Accounting and Bookkeeping Departments Have Light, Roomy Quarters 50 x 110 Feet

(this is peremptory) and it must not exceed a reasonable investment in stocks. The work is carried on by a corps of stock clerks who keep complete card records of supplies purchased, and who scan regularly an "inventory card" on which the warehouse reports the quantities on hand. It is also the function of this department to "edit" the orders as received; that is, to see that the wording of the various items is in terms intelligible to the various people interested, and that there is no doubt as to just what is wanted before the order is entered. It is said above that the Stock Maintenance Department purchases the stocks. This is true so far as apparatus made by the Western Electric Company is concerned. Where, however, the article must come from another source of supply the order is referred to a Buying Division. This leads us to another phase of the Western Electric Company's place in the Bell System.

(c) The Buying Division

In all efficiently managed businesses that operate in several locations the advantages, and even the downright necessity, of a centralized purchasing agency have been recognized. As the process of standardization has been carried to a high degree of perfection in the Bell System, it has been possible to combine the purchasing power of the entire organization, and of course the secret of advantageous buying lies in quantity buying. The General Purchasing Department of the Western Electric Company buys for the entire system all the principal items required for plant development of the Bell Telephone industry in the United States. These purchases, as a rule, are made by contract, the requirements of all the telephone companies being covered in advance on the basis of estimates prepared by the local houses. Besides these so-called principal purchases, however, there is a great volume of buying that must be done locally. Furthermore, the general purchasing organization must have scouts throughout the country on the lookout for new sources of supply and cheaper markets. To provide for these two needs there is a local buying organization at each house; and at New York there are four buyers and a clerical force engaged in this work. It necessarily follows that this department verifies the correctness of suppliers' bills and performs the other necessary adjuncts of buying work.

(d) The Service Division

Needless to say a great majority of the orders placed with the Western Electric Company by the Telephone Company are filled without the necessity of a claim or question as to delivery, and while all the materials required regularly are carried in stock, it sometimes is possible

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to fill an order only by making a special purchase either from the factory of the Western Electric Company or from some other source of supply. The Service Division of the Western Electric Company is equipped to keep track of all orders placed, to answer queries as to when delivery is to be made, and to investigate and adjust claims. When it is recalled that some 150,000 shipments are made each year to the New York Telephone Company, it is not surprising to find some adjustments of this kind necessary. Through its general traffic organization the Electric Company prosecutes claims on carriers, checks freight and express bills for classification and rate, and expedites delivery of goods. Here again the great power of the general organization tells; for the Western Electric Company is a big shipper in transportation, and as such has considerable influence, much greater than would any one of the units which it represents.

(e) The Clerical & Accounting Division

There is also an organized clerical force to copy the orders, bills, credits, etc., and to attend to the bookkeeping and accounting. All of this work is carried on under an Assistant Stores Manager. Much has been done by this organization to speed up and improve the methods of performing the large mass of routine clerical work involved in the business with the Telephone Company. Here again, as all through the work, there is an advisory organization to assist the local house, developing new ideas, conveying from one house to another the improvements worked out by other houses. With all these houses in keen competition to improve their methods and therefore the service—for their efficiency is judged from this standpoint—many good developments are worked out and passed along.

(f) Repair Shop & Returned Material

A volume might be written on different features of the work—the big telephone shops, the millions of investment at the factory ready for immediate shipment to all points of the country, and the emergency preparedness against fire and storm, but some of these will have to be taken up in other places. We wish, however, to sketch the system of disposing of returned material, for it so happens, as may easily be imagined, that people will want their telephones moved or taken out or changed for some other reason; or obsolescence—an ever present factor in the telephone industry because of the active policy of improvement in the art—may claim a central office. What is to be done with this never-ending stream of valuable equipment?

In the first place, it has been arranged by coöperation between the various Bell

In a Room 63 x 98 Feet the Stenographic, Graphophone, and Order Entering Departments Are at Work

Local Apparatus Repair and Machine Shop, 50 x 110 Feet

Cord, Plug, and Minor Repairs Are Made in the Local Shop. The Room is 50 x 110 Feet

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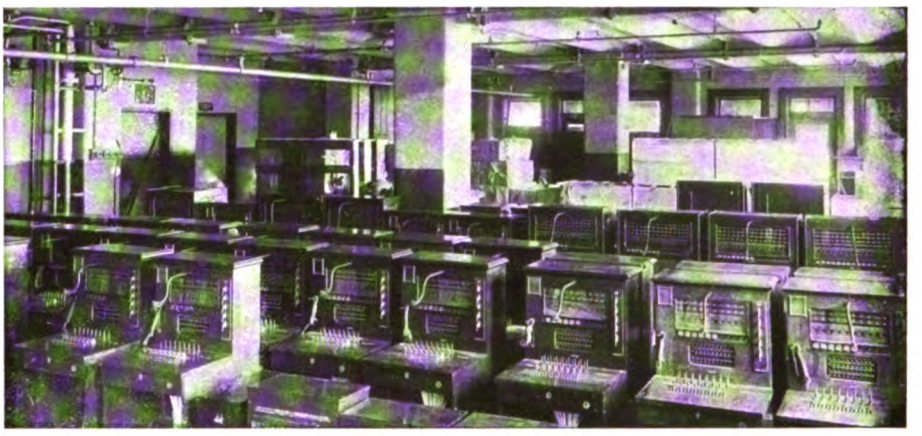
companies that apparatus repaired under standard specifications by the Western Electric Company—that is, not required by the company from which it may have been returned—may be applied on any order that may be placed by any other company. This arrangement provides an outlet for a considerable amount of locally slow moving equipment. Here is further evidence of the benefits derived through the central supply organization—the Western Electric Company. But the great bulk of the material returned can be used by the New York Telephone Company in its own business. It is for the prompt repair of such material that the Western Electric Company maintains its returned material organization, the basis for which is the repair shop.

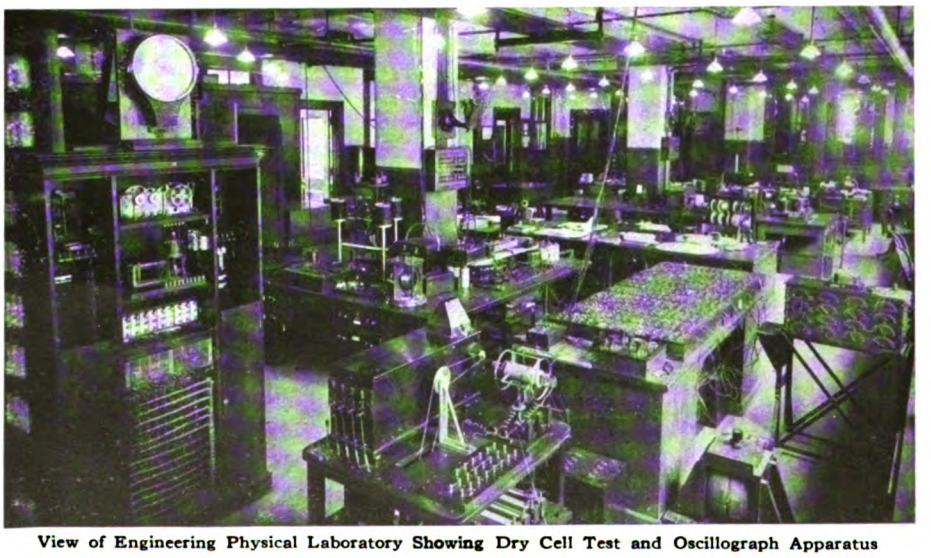
The plan of operation on this returned material problem is about as follows: The Western Electric Company issues credit in full for all material returned. It inspects it, classifies it, to determine whether or not it is slow-moving enough to retire it from service altogether by returning it to the factory, and to determine whether or not its condition warrants repairs. The repairable material is then put through the shop, repaired under approved specifications and then placed in stock for reissue on the next order that comes along. The Western Electric Company's investment in returned material at New York amounts now to between $200,000 and $300,000, and, naturally, the constant aim is to keep it moving as rapidly as possible.

An important branch of the work of the Returned Material Division is the disposition of junk. In the normal pursuit of its business and not indicating any waste at all, the New York Telephone Company has over half a million dollars' worth of junk to sell in a year. A blizzard may break a heavy line into bits—result, many thousands of pounds of junk copper. An ancient cable may be replaced by a modern larger one—result, a big consignment of lead and copper. Telephones must be dismantled and platinum and other valuable materials recovered. On all this material competitive bids must be obtained and the most advantageous sale made. Much of the material is accumulated in small lots. These are hardly salable locally, but combined with other lots of the same sort of material are valuable. The Western Electric Company does this work of combining at its West street warehouse.



Portion of Stock of Switchboards

Part of the Packing Layout. Boxes Packed from the Trucks Are Placed on the Power Conveyor to Be Taken to the Nailing Machine



View of Engineering Physical Laboratory Showing Dry Cell Test and Oscillograph Apparatus

The General Departments

REFERENCE has been made herein to the general organization of the Western Electric Company. The scope of the Western Electric Company's business is, like that of its parent, the American Telephone & Telegraph Company, nation-wide, and in order to insure the coherence of all its parts the various local departments—the distributing houses—are supervised by these general departments, whose headquarters are in New York City. In so far as the Western Electric Company's function as supply agent for the Associated Telephone Companies is concerned, these general departments are four in number and, briefly, they may be described as follows:

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(a) The General Distributing Department

There are two main divisions of this department:

(1) The General Merchandise Division

The Company's general stocks of finished merchandise of Western Electric manufacture are maintained by this division at Hawthorne, and at other points they carry central stocks of "Not W. E." merchandise for distribution to the local houses. The average value of these stocks is approximately $6,000,000.

(2) The Methods and Inspection Division

This division not only makes periodical inspections of the work at each house, but frequently inspects outside establishments as well. This enables them to prescribe for the various houses standard methods which are based on the best practice found anywhere, for the economical handling of merchandise and for efficiently conducting the routine work of the office. They also supervise the standardization of jobs and establish individual piece-work rates or gang piece-work rates for these jobs, all of which makes for efficiency and economy in a business which affords large opportunities for the establishment of such methods.

(b) The Manufacturing Department

The Manufacturing Department operates the Hawthorne works in Chicago. This plant, occupying 200 acres of land, is devoted to the production of telephone equipment — switchboards, telephones, and lead-covered cable. In busy times about 14,000 men are employed. The supervisory function of this general department is applied to the repair shops located at the various local houses.

(c) The General Purchasing Department

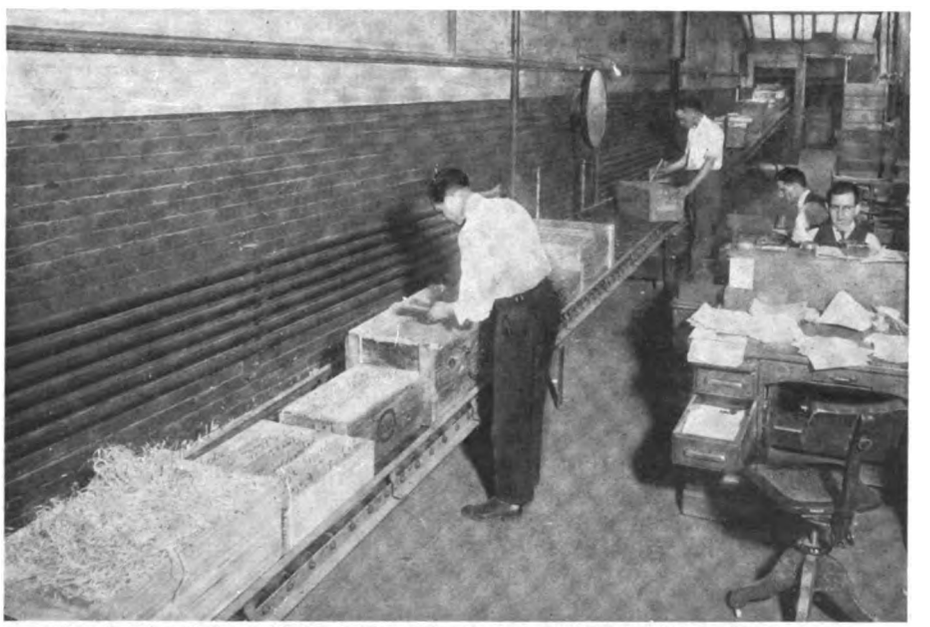
All the purchases of the important items used throughout the country are made by the General Purchasing Department. They also assist the houses on difficult delivery problems, whether general or local. Local buying is supervised by the General Purchasing Department. The General Purchasing Agent is also General Traffic Manager for the Company and as such assists the houses in the adjustment of claims and routing shipments.

(d) The Engineering Department

This department is responsible for the development of new apparatus required by the Bell System, and in this work it collaborates with the Engineering Department of the A. T. & T. Co. The Western Electric Engineering Depart-

Packages Arriving by Conveyor on Shipping Floor, 80 x 140 Feet

Part of the Stock Room, 65 x 90 Feet



After Leaving Packers All Goods Go to the Markers and Receipt Writers by Conveyor

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ment also gives much attention to the quality of materials entering the telephone plant, whether these materials are made by the Western Electric Company or not. An Inspection Branch is maintained for this purpose.

WITH these varied relations between the operating company and its supply department, it is easy to suppose that many questions arise as to methods, etc. For the discussion of these questions there is held regularly a "Stock Conference" between the two companies. The Telephone Company is represented by its Superintendent of Buildings & Supplies with his staff of Supervisors of Supplies, and the Western Electric Company by its Manager, the Stores Manager, and his staff. To these conferences are called others as required. Many important matters are here thrashed out, but most important of all a hearty spirit of personal coöperation is introduced that makes for the successful operation of the supply contract.

Stock Conference of Representatives of New York Telephone Co. and Western Electric Co.

In the 50 x 110 Feet Packing Room. Goods Taken from Packing Benches by Roller Conveyor

Contrasts in Service and Ownership

WHEN Salesman Frazee secured a contract for telephone service from a resident of East Orange, recently, the contrast between procedure here and in Paris, where the subscriber had had occasion to contract for service a few years ago, prompted him to relate his experience with the French telephone service.

First a permit had to be secured from the owner of the property; then this had to be taken to the municipal bureau having authority over all public utilities, from which the prospective subscriber had to go to several officials having offices in different parts of the city. His application for service being at last approved, he was obliged to buy his instrument, deposit 100 francs (about $20 in our money) for rental and possible toll usage, and worst of all, he had to wait ten weeks before the telephone was installed.

The service was very poor, said our East Orange subscriber, and it was impossible to get a connection to any distant point. In fact, the whole arrangement was very unsatisfactory.

So much for government ownership; the subscriber prefers to leave the development and management of the telephone to private interests, experience having convinced him that the best results can be obtained through this source.

L. N. BRANT,
Local Commercial Manager, East Orange.

Freeport Operators' Coolness Aids Fire Department

ONE of the greatest ends the telephone serves is that of fire-fighting. Coöperation between the fire departments and the Telephone Company must be the fullest if the danger from fires is to be reduced to a minimum, and it is with interest that we learn of the situation in Freeport, L. I., where such coöperation is recognized as particularly complete. A letter from the chief of the fire department of Freeport, acknowledging the excellence of the service given by our operators, speaks well for the manner in which the Traffic force is dispatching this difficult and momentous part of the work. Chief Pearsall says:

FREEPORT, N. Y.

Mr. Charles A. Ryder, Local Com. Mgr., New York Telephone Company, Grove Street, Freeport, L. I.

DEAR MR. RYDER: Through you I want to commend the girls connected with the Freeport central office for the cool-headedness they display in attending to fire alarms. This is a difficult duty even when the person giving the alarm is not excited, and I have noticed several situations lately calling for quick judgment on the part of the operators and have been pleased at the way they have handled the situations.

Very truly yours,
(Signed) HOWARD E. PEARSALL,
Chief, Freeport Fire Dept.

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Perseverando

Rowan in Tropical Cuba Had an Easy Time "Delivering the Message to Garcia" as Compared with Charles Jaeger and Crew Delivering Telephone Supplies to White Plains through the December Blizzard

THE journey of our five-ton Pierce-Arrow truck to White Plains during the last heavy snow-storm, the story of which appeared in THE TELEPHONE REVIEW for January, created so much interest that we have obtained the following additional information for our readers.

What was done in this particular case was unusual only as to the conditions. There is not a chauffeur in the Company who would not have done the same under the same conditions.

By JOHN MCLACHLAN
Supervisor of Motor Vehicles

THIS truck left 463 West street at 1 P.M., December 14. On the way it picked up an additional supply of skid rope, oil, and gas, proceeding by way of Twenty-sixth street, Tenth avenue, Twenty-third street, Eighth avenue, Thirty-fourth street, and Third avenue to 150th street. By this time darkness had set in.

At this point of the journey the real troubles commenced, trolley lines and the electric light system being entirely out of commission, and hence offering no means of illumination to guide the men in charge of the truck on their way. Proceeding very slowly to Fordham road, Webster avenue, and Gun Hill road, they reached White Plains avenue. When it was too late, they discovered that the Street Railway Company had been extending their system, the truck having ridden into the railway ties. It being impossible to attempt to go back, the driver proceeded very cautiously over the railroad ties until the next crossing was reached. There he laid down his skids, mounted them, and was able to run the truck to the side of the road. At this point I might state that no indication whatever was displayed as to the road's being under construction. Around this section were strewn a number of Street Railway Company's snow plows, which had been there since the early part of the storm, in addition to the added snow piled on the roadside by the property owners, which still added to the difficulties of the truck in making progress. It was necessary to force the truck a few feet ahead and then reverse as far as possible so that momentum could be obtained to force their way a little further. This operation had to be performed for a distance of three-quarters of a mile and on second gear.

Getting into the center of the road again, the driver discovered that the remainder of his skid cable had ripped off the wheels. Having no more skid cable, he resorted to removing his winch cable for skid purposes.

After applying the skid cable, he proceeded on his way, turning west into North Fourth avenue. The condition of this avenue necessitated its being taken in a similar manner to that described above for the three-quarters of a mile distance. On reaching the junction of North Fourth and Lincoln avenues, the driver found a five-ton Mack, a three-ton Packard, and a three-ton White, all of which had been snow-bound for more than thirty-six hours. The position of these trucks made it quite impossible for our Pierce-Arrow to proceed. These trucks being unattended, it was necessary for our driver to clear the way. A rope was taken from the supplies of our truck, fastened to the Packard and, with the aid of two long digging bars, a policeman, and a helper, he was able to move the Packard sufficiently to allow him to pass. (The digging bars were also part of the supplies.)

Proceeding a little further under extreme difficulties because no vehicles of any description, not even a sleigh, had been on this road to make a track to guide them, the men had to clear the snow with the use of shovels for a considerable part of the way.

On reaching Waverly Square, they discovered a pole broken a few feet from the ground and hanging across the road, being too low to allow the truck to pass under. Some means had to be provided to raise the pole sufficiently to allow the truck to pass. This was done with the aid of a wood block and a heavy jack placed under the pole at the broken end.

Proceeding further, another Mack truck was encountered, which had been snow-bound for twenty-four hours. In order to pass this, snow had to be cleared for a distance of a hundred feet or more.

The next obstruction was a snow-bound trolley car, which had been lying for forty-eight hours. From one side, had it not been for the trolley poles and the overhead wires, one would have been inclined to think it a huge snow-drift, there being no part of the car visible. To pass this, it was again necessary to shovel snow for a distance of 200 feet.

A little further down the road two horse-driven wagons also blocked the way, the drivers evidently having taken the horses home and left the wagons to their fate. The driver of the Pierce turned his wheel toward the side of the road, allowing the bumper of his truck to rest against the rear wheels of the wagon. A little persuasion given to the motor was all that was necessary to remove wagon No. 1, the same treatment being applied to wagon No. 2. By this time daylight was breaking and there was still seven hours' journey before them.

Another trolley car being met it was necessary to pull to the side in order to pass it. In doing so, the remainder of the winch cable came off the wheels. No more skid wire being available and, fortunately, part of the load consisting of one and one-half inch manila rope, this was taken and applied.

Before proceeding further, a short recess was taken to allow the driver and his helper to get something to eat. This they found was almost as hard to get as the road was to travel. Picking up the telephone in a nearby house, the driver called the office and reported the difficulties which confronted them in order to reach their destination. The only reply from the office was that there was a gang of men waiting for the material at White Plains.

To cover the remainder of the journey, every time a trolley car or other vehicle was encountered, it was necessary to shovel snow to pass same. Several very steep hills had to be taken, but, with the good-will of the men and the aid of two shovels, this was easily accomplished, arriving at White Plains office at 1 P.M., December 15, 1915, after covering a distance of twenty-seven miles in twenty-four hours.

It may also be interesting to know that this truck was operated by one of our Long Island shop mechanics by the name of Charles Jaeger.

Unbound by Telephone

THE Corning *Leader* prints an account of how our central office operator, Miss Carrie Niles, hearing muffled sounds of distress which were unintelligible, called the police to the aid of a subscriber who had been bound and gagged by a burglar. Miss Marie Hillman, a photographer with studio apartments in the J. M. Greig Company Building, was attacked, bound, and gagged by a masked burglar who stole what money she had and left her lying in a swoon on the floor. When she regained consciousness she found herself helpless and unable to utter a cry of any kind. She was in the hallway, but managed to regain her doorway, and knocked off the receiver of the telephone which stood on her desk. After slightly loosening the towel tied around her head as a gag, she cried into the telephone for the operator to call the police. Although Miss Niles did not clearly understand Miss Hillman's muffled cry, she realized that something was wrong and swiftly summoned Officer Dennis, who freed and ungagged Miss Hillman.

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The Birth of the Telephone

Commemorated by the National Geographic Society

A DEMONSTRATION of what the Bell System has made possible staggered the imagination of a distinguished gathering of government officials, scientists, statesmen, and diplomats, at the annual dinner of the National Geographic Society, held on the evening of March 7 to celebrate the fortieth anniversary of the date, March 10, 1876, on which Dr. Bell and Mr. Watson first transmitted speech to each other by telephone. There were about 750 present at the dinner.

The day is one worthy to be celebrated. "I tell you it was a great day, the tenth of March, 1876," said Dr. Bell, referring to it in his address, "when, at last, there was no doubt about it; complete words and sentences were understood both by Mr. Watson and myself."

"I am really overwhelmed by the realization of the greatness of the demonstration that has been given us to-night. Wonderful! Wonderful!" said Dr. Bell anent the present occasion.

At the conclusion of the banquet, about 9.40 P.M., Mr. O. H. Tittmann, president of the National Geographic Society, introduced the Hon. Franklin K. Lane, Secretary of the Interior, who acted as toastmaster. Mr. Lane immediately turned the meeting over to Mr. J. J. Carty, chief engineer of the American Telephone and Telegraph Company, for the various wire and wireless demonstrations that had been arranged for, in connection with which individual receivers had been provided for each guest at the banquet.

Telephony by Wire

For the demonstration, connections were established between the banquet hall at Washington and the points mentioned below, in the sequence given:

	Miles
Seattle, Wash.	3,667
Ottawa, Canada	767
El Paso, Tex.	2,619
Jacksonville, Fla.	822
San Francisco, Cal.	3,400

Emergency circuits were built up to the same points, which brought the total mileage up to 19,600.

In lining up the emergency circuits, some of the combinations used were as follows:

(*a*) Washington-Seattle route via Pittsburgh, Chicago, Omaha, Denver, El Paso, Tucson, Yuma, Los Angeles, San Francisco, and Portland. This circuit has a length of 4,900 miles. It was probably the longest telephone connection which has ever been set up.

(*b*). An emergency Washington-Denver circuit was built up using an underground cable, Washington-New York, thence non-loaded No. 8 gauge circuits, New York-Denver. This was connected through at Denver to Seattle via San Francisco and Portland. The total length of this circuit, including 253 miles of underground cable between New York and Washington, was 4,560 miles.

Upon completion of the connection to each of the points mentioned, Mr. Carty first said a few words to someone at the distant point and then called the roll of the important test stations along the line, someone at each of these intermediate points answering Mr. Carty as the name of his city was called.

A large map was placed on the wall in the banquet hall, and the routes and circuits used for the demonstrations of the transcontinental wire telephony were indicated thereon. As each station responded to the roll call over the wire, a tiny incandescent lamp on the map, indicating the location of the city, would light up and remain lighted thereafter during the demonstration. For those cases, however, where the same station was on the route to more than one of the distant points and responded more than once, therefore, to the various roll calls, on the second or later roll calls the lamp of that station would be extinguished for about a second and then relighted.

The names of the telephone men who responded to the roll call and the points at which they were located were as follows:

Roll Call for Annual Banquet

NATIONAL GEOGRAPHIC SOCIETY

Tuesday, March 7, 1916

At the New Willard Hotel

1. *Seattle.*

Washington	Mr. Truesdell
Pittsburgh	Mr. Meaghan
Chicago	Mr. Burkhardt
Omaha	Mr. Cutler
Denver	Mr. Willburn
Salt Lake City	Mr. Ansley
Pocatello	Mr. Geddes
Boise	Mr. Clark
Walla Walla	Mr. Anderson
Portland	Mr. Phillip
Seattle	Mr. Vogel

2. *Ottawa.*

Washington	Mr. Truesdell
Lansingburg	Mr. Rocky
Ottawa	Mr. McPherson

3. *El Paso.*

Washington	Mr. Truesdell
Pittsburgh	Mr. McCauley
Chicago	Mr. Peters
Omaha	Mr. Cutler
Denver	Mr. Willburn
Trinidad	Mr. Ledterman
Albuquerque	Mr. Reynolds
El Paso	Mr. Roach

4. *Jacksonville.*

Washington	Mr. Truesdell
Lynchburg	Mr. Rutherford
Denmark	Mr. Conover
Jacksonville	Mr. Leman

5. *San Francisco.*

Washington	Mr. Truesdell
Pittsburgh	Mr. Meaghan
Chicago	Mr. Burkhardt
Omaha	Mr. Cutler
Denver	Mr. Willburn
Salt Lake City	Mr. Ansley
Winnemucca	Mr. Twist
San Francisco	Mr. Pettygrove

THIS was a marvelous demonstration of what Mr. Vail has said in his Annual Report for 1915:

> During the year the [Engineering] Department has done important and confidential work with representatives of both the Army and the Navy in the matter of new methods of wireless and wire communications, with special reference to naval and military uses. In addition to this, and for the benefit of the Army and Navy authorities, studies and investigations have been made into the wire communications and connections of our plant throughout the United States. This work, which is still going on, has made it clear that the comprehensive wire network of the Bell plant, by a simple plan of coöperation, will supply to the scheme of National defense a working system of communications unequaled by that of any other nation.

In addition to the talks between Mr. Carty and the telephone representatives at the different points, as mentioned above, there were also talks as follows:

1. Rt. Hon. Sir Robert Lawrence Borden, the Prime Minister of Canada, sent a telephone message from Ottawa, the capital of the Dominion, to the guests at the banquet. The Postmaster-General of Canada, the Hon. T. Chase Casgrain, sent a telephone message to Postmaster-General Burleson. Major-General the Honorable Sir Sam. Hughes, Minister of Militia, also sent a message. The messages were sent through Mr. J. E. Macpherson, District Superintendent of the Bell Telephone Company of Canada, in Ottawa.

2. During the El Paso connection Mr. Carty talked to General Pershing. General Pershing told Major-General Hugh L. Scott, Secretary of War ad interim, seated at the head of the table, that all was quiet on the border.

3. During the connection to San Francisco there were talks between Captain Gilmer, of the United States Navy (who was at San Francisco), and Mr. Carty, Secretary of the Navy Daniels, Secretary of the Interior Lane, and Captain W. H. G. Bullard, of the United States Navy, who were in the banquet hall at Washington. Captain Gilmer said to Secretary Daniels, "Tell them to urge increased military preparedness." These talks were followed

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by a talk between Mrs. Lawrence Harris, who was a guest at the banquet, and her five-year-old son in San Francisco.

4. Following the various talks to San Francisco a motion picture was shown of the surf at the Cliff House, San Francisco, while the sound of the waves at the Cliff House was transmitted over the Transcontinental Line to the banquet hall at Washington. This in turn was followed by the transmission of a phonographic selection, "The Stars and Stripes Forever," over the circuit from San Francisco to the banquet hall.

The wire demonstrations were concluded with a good night roll call over the route between San Francisco and Washington. This final roll call was not made, however, until 10.40 P.M., after the completion of the wireless demonstration described below. In this final roll call, good night was said to the various points in the following order:

San Francisco, Winnemucca, Salt Lake City, Denver, Omaha, Chicago, Pittsburgh, Washington. As each station was called in and said good night, the lamp corresponding to that station on the map previously referred to was extinguished.

Demonstration of Wireless Telephony, 10.30 to 10.40 p.m.

The demonstration of wireless telephony was divided into three parts, as follows:

1. A talk between Mr. Carty at the banquet hall and Mr. Espenschied at the radio station, Arlington, Va. Mr. Espenschied talked with Mr. Carty by wireless telephone from the Arlington Radio Station to the Western Electric Company's building, 463 West street, New York, from which point the connection was extended by wire to the banquet hall at Washington. Mr. Carty talked to Mr. Espenschied by direct wire from the banquet hall to the radio station.

2. A talk between Secretary of the Interior Lane, toastmaster of the banquet, and Mr. Carty. For this demonstration an additional set was provided for Secretary Lane, which was connected by wire to the radio station at Arlington, thence by wireless to the Western Electric Company's building at New York, thence by wire to Mr. Carty's sub-station set at the banquet hall, Washington, with all the banqueters listening in on the conversation at Mr. Carty's end of the line. Mr. Carty replied to Mr. Lane over a short direct trunk within the hotel.

3. Transmission of a phonographic selection, "The Star-Spangled Banner," from the radio station at Arlington to the banquet hall; by wireless from Arlington to New York, thence by wire from New York to the banquet hall. During the transmission of this music a motion picture of the United States flag was shown on the screen.

Upon the completion of the wireless demonstration, the connection of the wire circuit to San Francisco was re-established for the final transcontinental roll call referred to above.

Motion Pictures, 10.45 to 11 p.m.

A series of motion pictures of scenes along the transcontinental route to San Francisco was shown, accompanied by appropriate explanatory remarks by Mr. W. F. Schmidt, of the New York Telephone Company. This concluded the demonstrations.

Speeches

About 11 P.M. the meeting was turned back to Toastmaster Lane by Mr. Carty, and Toastmaster Lane introduced in turn the various formal speakers of the evening, as follows: Mr. Theodore N. Vail, president of the American Telephone and Telegraph Company; Dr. Alexander Graham Bell, inventor of the telephone; Mr. J. J. Carty, chief engineer of the American Telephone and Telegraph Company; Honorable Josephus Daniels, Secretary of the United States Navy; Mr. Thomas A. Watson, associate of Dr. Bell in the early days of telephony; Mr. U. N. Bethell, senior vice-president of the American Telephone and Telegraph Company.

DR. AND MRS. ALEXANDER GRAHAM BELL
At the Unveiling of the Tablet at 109 Court Street, Boston

Forty Years Ago

IN commemoration of the birth of the telephone and its first use in the city of Boston forty years ago, two tablets were unveiled there on March 13 by Dr. Alexander Graham Bell, the inventor. The first tablet was set in the building, 109 Court street, where in two rooms in the attic Dr. Bell and Mr. Watson conducted their experiments for some time, and where on June 2, 1875, the first sounds ever transmitted by telephone were spoken by Dr. Bell and heard by Mr. Watson.

The other tablet was placed in the building, at 5 Exeter Place. It was here that Dr. Bell and Mr. Watson conducted their further experiments in their rooms in a boarding-house, and on March 10, 1876, that the first complete sentence was ever transmitted over a telephone. Dr. Bell said: "Mr. Watson, please come here, I want you!" and Mr. Watson heard it distinctly.

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Main Society

THERE is a strong temptation to tell more than the announcements have stated regarding the great event which will occur on Friday evening, May 19, but not another word should be necessary to bring out every member of the Society, and besides it would take the edge off curiosity as to what the surprises are to be.

It had been expected that Mr. U. N. Bethell would be the speaker at a regular meeting of the Society toward the end of the season, and although he will probably make only a short talk instead of a speech, and it will be heard by the members of the societies in Philadelphia and Baltimore as well as New York, over the telephone, the privilege of hearing him is alone a sufficient inducement any time for the members to come out in full force. Coupling these features together makes a rare occasion. But there is more mentioned in the announcements sent out.

There is the dinner. Think of three thousand or more men seated at dinner in one room! That is why the 71st Regiment Armory has been selected for the affair. It will require about 400 cooks and waiters to prepare and serve the full course dinner that will be furnished.

And the transcontinental telephone demonstration!

And the surprises!

To tell any more would be to betray secrets, but it is conservative to say that New York has never seen such a night as the Telephone Society members will have May 19. Informal dress!

Hudson Section

THE twentieth meeting of the Hudson Section, Telephone Society of New York, was held in Albany on February 24. The evening was devoted to papers and discussions on the work preparatory to the opening of the new Albany "Main" central office, and the new Albany toll-board, which were cut into service on the evening of January 29, 1916.

Mr. R. P. Bunyan, construction foreman, spoke on the cable and subway work. He gave an interesting account of the laying out of new subway routes and the enlargement of the present facilities, and some of the difficulties that had to be overcome, particularly in the downtown districts of the city where there was already a network of pipe lines and other obstructions. He described the placing and splicing of the new cables, some of which are the largest in the Hudson Division.

Mr. H. Smith, equipment engineer, told of the equipment work incidental to the installation of the new switchboard and the terminal-room equipment. He described the principal points of difference between the old and new equipment. Mr. Smith paid particular tribute to the Western Electric Company's men who carried out the installation work.

Mr. R. K. Allerton, district traffic chief, gave an account of the training of the operators before the cut-over. He gave some interesting details as to how this training was systematized, and how it resulted in an entire absence of confusion after the cut-over had been made. Mr. Allerton gave some facts as to the volume of traffic handled and the amount of special equipment and furniture that had to be ordered.

After the papers, Mr. E. H. Powley, division plant superintendent, took this opportunity to thank all the men who helped to make the cut-overs a success. Remarks were also made by Messrs. W. R. Adams and F. E. Dunphy. The meeting then adjourned to give the members of the section the opportunity of visiting the new central offices, the terminal room, operators' quarters, and cable vault. Representatives of the Plant and Traffic Department were on hand to answer questions. It was nearly midnight before the members left for home, voting this one of the most successful meetings ever held by the Hudson Section.

Chapter meetings of the Hudson Section were held at Glens Falls on March 2, Poughkeepsie on March 9, and Kingston on March 10. All these meetings were addressed by Mr. F. E. Dunphy, toll engineer, on "Toll Line Maintenance."

The meetings were all well attended.

Central Section

DESPITE the inclement weather on the evening of March 14, over 100 members of the Central Section braved the storm to attend the March meeting, which was held in the James Exchange Building, Syracuse.

The principal speaker of the evening was the Hon. Walter R. Stone, mayor of Syracuse. During the course of his talk he related many amusing and interesting incidents in connection with his duties at the head of the city government. His plea was for greater efficiency and imagination in business, and in stirring words he called attention to the inspiration to be found in every line of work. He said in part:

> There is nothing at all prosaic in business unless you choose to make it so of your own neglect. Not one of you can name one business which has not grown bigger and better through the realized dreams of great minds.
>
> **Do Your Work Well**
>
> My advice to you would be to forget all about the bosses—forget even that there are bosses in the desire to do your own work well. Efficiency is the keynote of every modern business, be it the dry goods store or the telephone. You are working for one of the most wonderful companies in the world. Make your own dreams realities.

Following the Mayor, Mr. W. W. Nicholson, now commissioner of public safety under Mayor Stone, spoke briefly, and Mr. L. M. Smith, district traffic chief at Binghamton, told of some interesting features in connection with the recent consolidation of telephone properties at Binghamton.

The Blue Bell Orchestra and Quartet were in their best form and provided an excellent musical program.

Western Section

Buffalo

ON Tuesday evening, February 29, the Western Section held its thirty-fourth meeting in the Telephone Building, Buffalo.

Mr. A. A. Landon, vice-president and general manager of the American Radiator Company, delivered an address to the Society on "Industrial Organization." He pointed out the necessity of preparedness; *i.e.*, individual preparedness. The man who is not preparing himself

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for the next higher position is not a success in business. A man who wants to succeed is not satisfied to work the prescribed hours, but will at his leisure moments prepare himself for bigger things. In conclusion, Mr. Landon spoke of his experiences while traveling through France some few months ago. He said the organization of the warring nations is similar to an industrial organization except on a much larger scale.

Mr. Joseph Schriever, who served as an American Volunteer driving a French ambulance, related some of his experiences. He also mentioned the high standard of efficiency of the organization of the warring countries.

At this meeting twenty-two applications for membership were received.

Rochester

A DISTRICT meeting of the Society was held in Rochester on Friday evening, January 21, 1916. Mr. E. B. Craft, development engineer, of the Western Electric Company, read a most instructive paper on "The Engineering Laboratories of the Western Electric Company." The lecture was accompanied by lantern slides.

Motion pictures entitled "The Telephone Girl" and "The Telephone Way," were shown and were enjoyed by all. They proved especially interesting to the women employees who were present.

Some of Irving Berlin's latest songs were introduced by Messrs. Kuntz and Miller.

Help Secured and Fears Allayed

THE Philadelphia Chamber of Commerce Traveling Trade Commission left Philadelphia at ten o'clock, March 6, in a special train for a week's tour of a number of cities in Pennsylvania and New York.

The train was equipped with two telephones which were connected with the Bell System at every stopping point for the convenience of the eighty members of the party, including Mr. R. C. Mason, who represented the Bell Telephone Company of Pennsylvania.

On the way from Syracuse to Binghamton, about noon on the 10th, the driving rod of the engine broke, and the engine jumped the rails, running along the ties for about a third of a mile before the heavy train of eight all-steel cars could be brought to a standstill. The accident occurred about eighteen miles north of Binghamton, and about 200 yards from a milk station known as Itaska. At this point there is a steep railway embankment which drops twenty feet to the water of the Tioughniouga River. The Chamber of Commerce men were at luncheon in the two dining cars in the center of the train when the accident happened, but beyond being considerably shaken up no one was injured.

As soon as the train stopped Mr. Mason jumped off and naturally hunted up the first Bell telephone he could find. This he located in a general store in the village, being on a rural line out of our connecting company office at Whitney Point, which exchange in turn is an office checked by Binghamton. Mr. Mason explained the situation to the operator who answered his call, and was immediately connected with Mr. L. M. Smith, District Traffic Chief of the New York Telephone Company at Binghamton. Mr. Smith promptly notified the Superintendent of the Lackawanna Railroad, who at once sent out a wrecking train to put the engine back on the track. His promptness enabled the train to make Binghamton and Elmira that night.

Mr. Smith also put through five or six Philadelphia calls with remarkable speed. He also notified the Chambers of Commerce at Binghamton and Elmira of the delay and that no one was injured.

Local Manager Doolittle, who was at the station in Binghamton with Mr. Spencer, of the Plant Department, waiting for the train, upon learning of the accident started to send linemen with the necessary wire to connect the telephones on the train, but due to Mr. Smith's promptness it was not necessary to connect the instruments where the accident occurred. However, arrangements were made to connect the train as usual at Binghamton, and this was done in a few seconds after arrival. Thanks to Mr. Smith again, seven or eight calls to Philadelphia were made here in less than half an hour. Members of the party called up their families to assure them that they were uninjured.

What an Installer Can Do

MR. J. KEEP, of the Installation Department, Manhattan-Bronx, contributes some very interesting suggestions which might well be followed by other installers. For instance, he states that last year he placed twelve or fifteen additional extension stations by simply asking the subscribers how much their time was worth and pointing out to them that an extension station would save enough time to more than pay the cost. He also states that he suggested a number of private branch exchanges which were afterward installed by subscribers who had inadequate facilities.

Another point which he mentions is that in the course of his work he has been able frequently to call the attention of subscribers to the loss of time and the congestion of the lines caused by the habit of asking the P. B. X. operator to get a number and then going off and having to be called back to answer the telephone. He has also been able to point out to P. B. X. operators—to quote his own words—"that absent treatment is not a success in running the board, and that the operator at Central is human."

Not only do employees benefit the Company by such suggestions to subscribers, but they render the subscribers a valuable service whenever it is possible in the proper conduct of their work to draw attention to such matters.

What an Operator Can Do

MISS MARY HAYES, nineteen, an operator in our Utica exchange, was on her way home at nine o'clock on the night of Washington's Birthday, when she saw a flickering light reflected on the window of a meat store she was passing. Peering through the window she saw a small fire on the floor. Describing what followed the Utica *Daily Tribune* says:

Miss Hayes showed that she had profited by her training as a telephone operator. She turned and started on a run toward Mohawk street, which is a short distance east, entered the store of Luke Cahalan at the southwest corner of Bleecker and Mohawk, and telephoned to "Central" to send in an alarm. Then Miss Hayes walked back to the fire. It was hardly more than a minute from the time she first saw the light reflected on the window, and in three minutes more the apparatus from the Central Fire Station was on the job.

Wants a Rat Killed, Calls Dog by Phone

CLAYTON, N. J., February 12.—When Isaac B. Pancoast wants his dog, he calls it by telephone. "Tiny," the dog, was raised on Pancoast's farm and divides her time between his house in town and the farm.

The dog was at the farm when Pancoast wanted a rat killed here. He phoned and told the farmer at the other end of the wire to hold "Tiny's" ear to the receiver. Then he called "Rats, rats. 'Tiny,' come home."

In a quarter of an hour "Tiny" had killed the rat.—*New York American.*

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Transcontinental Demonstrations

First Reformed Church of Brooklyn

ONE of the most successful and keenly appreciated transcontinental demonstrations that have yet been held was that given at the First Reformed Church of Brooklyn, on February 18, when about one thousand people learned by experience some of the wonderful possibilities of the Transcontinental Telephone Line. Mr. James Robb, who is a member of the congregation, acted as master of ceremonies. In acknowledging his introduction by the pastor of the church, Mr. Robb referred to the beginnings of the telephone in these words:

It is a little less than forty years since a young Scotsman, ALEXANDER GRAHAM BELL, who had come to this country on account of his health, invented the telephone. In these more privileged days the telephone has come to be regarded as a commonplace fact of our everyday life; and we are apt to forget that the wonder of it has become greater, and not less.

Before Bell invented the telephone, he first invented the *thought* of transmitting human speech electrically. It is to me a most interesting fact that the earliest account we have of the conception of the electric telephone belongs to the year 1865, in my old home county town of Elgin, in the north of Scotland, where Bell was engaged as a teacher. He was standing in front of a mirror one night making some tests of the variation of vowel sounds by snapping his fingers against his cheek, when his room-mate woke up and asked what he was doing. Bell told him, and added *that he hoped some day to be able to* TALK BY TELEGRAPH.

I shall not attempt to describe to you the various stages of the telephone development, from the time when the limit of telephone conversation was over wires a few hundred feet in length, to the present time, when we can talk across the continent, and even across the oceans. I shall leave that to others. You have been invited here this evening to witness a demonstration of telephoning across the continent, from the Atlantic to the Pacific. A few years ago a pathetic little ballad, which achieved a certain amount of popularity, began: "Hello, Central, Give Me Heaven." The Telephone Company is not just yet prepared to establish connections there (that is, by *direct* communication), but we do hope to show you to-night that we can telephone from this beautiful church as far as the Golden Gate.

The motion picture, "The Transmission of Intelligence," set forth the development of the methods of communication, and the address on "The Triumph of Science" described the building of the Line. These were followed by synchronized moving pictures of Mr. Watson, telling in his own words of the events which transformed the telephone from the dream of a genius to a fact of science. The interest of the audience was extreme, and when this presentation of what is behind the telephone was crowned with the actual experiencing of some of its greatest wonders, the enthusiasm was intense.

Mr. Robb opened the Line with a roll call of wire chiefs, and as he worked his way rapidly westward, the expression of wonder on the faces of the audience told its own story. It was a story of awe and marvel at the magnitude of the achievement by which in the briefest interval a person could talk from New York to Buffalo, Chicago, Omaha, Denver and San Francisco in turn, without so much as lifting his voice above its natural tone.

After greeting Mr. Bates at San Francisco, Mr. Robb turned over the wire to Dr. Farrar, pastor of the church, who spoke with Mr. Bates. Col. Franklin P. Sellers and Dr. Kirk Guthrie, of the First Presbyterian Church of San Francisco, discussed in a humorous vein, the religious conditions of San Francisco. "Drink to Me Only With Thine Eyes" was sung over the Line by Mr. Carl Schlegel at Brooklyn, and San Francisco responded with "The Little Gray Home in the West." More conversations followed, between Mr. Robb and Mr. A. P. Crist, San Francisco representative of the Brooklyn *Eagle;* Mr. Charles L. Livingston and Mr. F. Deering, president of the Bohemian Club of San Francisco; and between Mrs. Wm. P. Morris and her husband, who was in San Francisco. Vocal selections, "My Laddie," by Miss Marie Von Essen, in Brooklyn, and "I Love a Lassie," and "Dixie," from San Francisco were followed by the roar of the Pacific Ocean and the good night roll call of wire chiefs with which Mr. Robb closed the transcontinental program.

In words of the warmest enthusiasm Dr. Farrar thanked Mr. Robb and the New York Telephone Company for the impressive experience the evening's entertainment had brought to the members of the church, saying that it had indeed been the most remarkable occasion ever held at the church, and one which filled him with awe of the marvelous fact which had been demonstrated. Not only to Mr. Robb and the officials of the New York Telephone Company, he said, were the thanks of the whole assemblage due, but to every man and woman of the organization—operators, ready to make connections across the whole wide continent, and linemen, guarding the Line throughout its length so that its great service be continuously maintained.

In the church calendar of the following Sunday, formal expression of the vote of thanks, which was unanimously carried at the close of the demonstration, was made in these words, printed on the outside page of the folder:

The members of this congregation and their many friends present last Friday evening thank Mr. James Robb and the New York Telephone Company for their entertaining, instructive and unique Transcontinental Telephone Line demonstration.

A few days after this demonstration, the Rev. Frederick F. Shannon, pastor of the Reformed Church on the Heights, in Brooklyn, preached in the Old First Church a sermon which he was afterward requested to repeat in his own church, and then to deliver before the Presbyterian Ministers' Association in Manhattan. This sermon has been printed in the Brooklyn *Daily Eagle*, from which we quote an extract as follows:

Fortunately, I have some spiritual statesmen—expert witnesses—in my Court of Life. Their testimony, bearing upon Man's relation to the World of Spirit—I mean the Personal, Holy, Wise, Loving Spirit of God in Christ Jesus—is at once commandingly authoritative, infinitely satisfying and richly redemptive from sense and sin.

One of my statesmen is Prayer. He assures me that I may talk with that Eternal Somebody who is not so far as to be near. When we—a thousand or so of us—were talking from the First Reformed Church of Brooklyn to San Francisco a few weeks ago, some of us were amazed at the instant replies which came from the other side of the continent and the cities between. "Hello!" called Mr. Robb. Instantly the answer flashed back: "This is Pittsburgh or Chicago or Omaha or Denver or Salt Lake City or San Francisco, Mr. Robb." It is the miracle of man's mastery over matter and space. How long does it take the human voice, flying on electric wings, careering over mountains, rivers, lakes, and prairies, to reach San Francisco? The time is actually so short that it can hardly be measured—the sixteenth of a second! That is wonderful; but my statesman named Prayer does something more wonderful still. Here it is: "Before they call, I will answer; and while they are yet speaking, I will hear." After hearing me quote that passage in this sermon, Mr. Robb said: "Mr. Shannon, I will have to tell the president of the New York Telephone Company, that notwithstanding our wonderful triumphs, we are yet behind the times. We can answer while they are yet speaking, but we cannot hear before they call."

Pennsylvania State College Association

THE Pennsylvania State College Association, at its annual banquet in the Winter Garden of the Hotel McAlpin, New York City, was linked with other "Penn State" audiences at the Hotel Fort Pitt, Pittsburgh, and at the Bush Street Building of the Pacific Telephone and Telegraph Company in San Francisco, on the evening of February 19. One hundred and sixty-five persons were present in New York, 360 in Pittsburgh and 25 in San Francisco.

After the address on "The Triumph of Science" Mr. Nelson Lloyd, formerly editor of the New York *Sun*, and toast-

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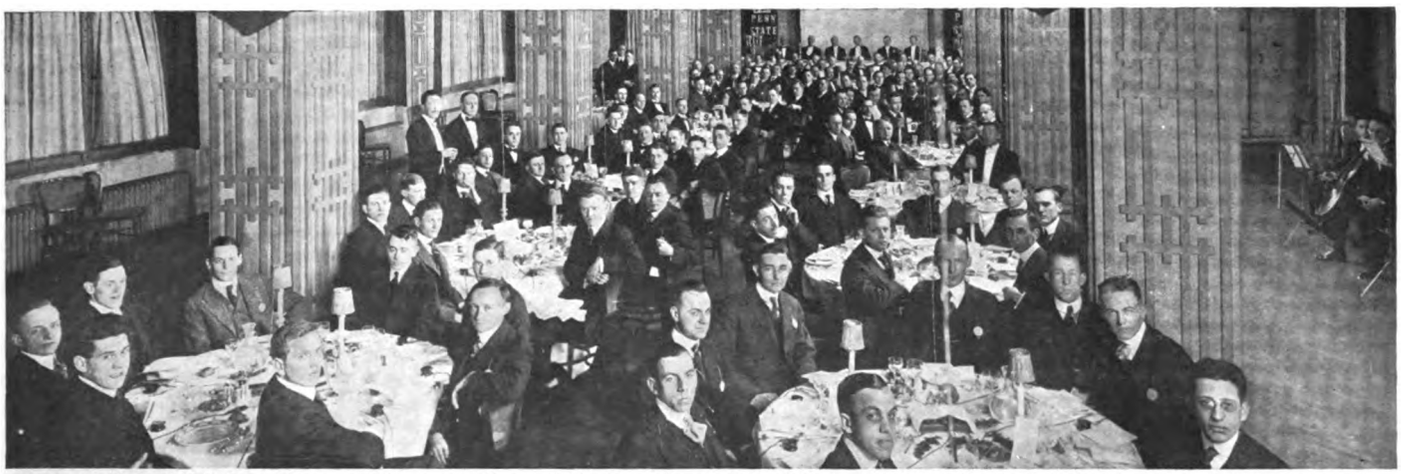

Transcontinental Telephone Demonstration at the Dinner of the Pennsylvania State College Association, Hotel McAlpin, New York, February 19, 1916

master of the evening, introduced Mr. Casler, who called the roll of wire chiefs, taking a somewhat different route from the usual one, and including Buffalo, Chicago, Pittsburgh, Omaha, etc. At Winnemucca a full-blooded Piute Indian, Beowawe Pete, was introduced and sent his greetings over the Line in his native dialect.

The "Penn State" cheer was given from New York and returned from Pittsburgh, and conversations followed. Addresses were made to the three audiences by Dr. D. C. Jackson, of the Massachusetts Institute of Technology, and Mr. R. L. Sackett, Dean of Engineering of Pennsylvania State College. The New York audience sang "Blue and White," the college song, and received the enthusiastic applause of the Pittsburgh audiences. After a number of interesting and amusing conversations, President H. E. Sparks, of Pennsylvania State College, made a brief address, and Pittsburgh responded in full chorus with "Old Prexy Sparks Is a Friend of Mine."

The roar of the Pacific with the accompanying motion pictures was followed by "The Star-Spangled Banner," which, with a good-night roll call of the wire chiefs, brought the demonstration to a close.

A motion of thanks and appreciation to the Telephone Company was unanimously carried, and informal expressions of enjoyment and interest were made personally by Dr. L. H. Baekeland, member of the Naval Advisory Board; Dr. D. C. Jackson, of Massachusetts Institute of Technology, and formerly a member of the Committee on the Appraisal and Valuation of the Telephone System in England; Hon. John Price Jackson, Commissioner of Labor of Pennsylvania; Col. J. F. Shields, a distinguished lawyer of Philadelphia, and trustee of Pennsylvania State College, and by J. G. White, of the J. G. White Engineering Company, of New York.

Jersey City Chamber of Commerce

AT the Scottish Rite Temple, Jersey City, the twenty-eighth annual dinner of the Jersey City Chamber of Commerce, held on February 24, was an event of unprecedented success because of the demonstration of transcontinental telephony, which was the feature of the program.

Col. Austen Colgate, state senator, and member of the firm of Colgate & Co., acted as toastmaster, and the 320 persons who made up the audience were enthusiastic in their appreciation of the various interesting experiences through which he led them. Mr. J. Spencer Smith, president of the Board of Commerce and Navigation of the State of New Jersey, spoke on "Jersey City's Commercial Opportunity," and Mr. S. A. Thompson, also known as "Deep Water" Thompson, secretary of the National Rivers and Harbors Congress, made a brief address on "Jersey City, the Nation's Gateway." "The Civic Opportunity of the Chamber of Commerce" was discussed briefly by Mr. James P. McGovern, secretary to the Director of Streets and Public Improvements of Jersey City.

The transcontinental program was

Transcontinental Telephone Demonstration at the Dinner of the Jersey City Chamber of Commerce, February 24, 1916

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then initiated, Mr. Carroll giving the address, and Mr. J. G. Orr, local commercial manager at Jersey City, acting as master of ceremonies. Mr. Orr made some pertinent remarks on "The Birthday of the Telephone" and "Preparedness" before opening the Line with the roll call of wire chiefs.

Hon. Austen Colgate conversed with Mr. Robert Newton Lynch, vice-president and manager of the San Francisco Chamber of Commerce; Hon. Mark M. Fagan, mayor of Jersey City, talked with Mr. Rainey, secretary to Mayor Rolph, of San Francisco, and a number of other guests spoke over the Line. Music was transmitted from both ends, the roar of the Pacific followed, and "The Star-Spangled Banner" brought the audience to their feet in a burst of enthusiasm.

Summit Board of Trade

ABOUT 152 citizens of Summit, N. J., were introduced to the wonders of the Transcontinental Line at the tenth annual dinner of the Board of Trade of Summit, on February 25. The demonstration proved to be one of the most successful that have been held, and was thoroughly appreciated by the entire audience, prominent among whom were Hon. Ruford Franklin, mayor of Summit; Dr. Alexander Humphreys, president of Stevens Institute of Technology; Hon. George H. Viehman, president of the State Chamber of Commerce; Hon. Mark Sullivan, judge of Hudson County Court; Mr. John J. Carty, chief engineer of the American Telephone and Telegraph Company; Mr. Richard Beyer, president of the Hoboken Board of Trade, and Hon. D. J. Steyn-Parve, Vice-Consul for the Netherlands.

After the address on "The Triumph of Science," by Mr. Leimbach, Mr. Carty was introduced as master of ceremonies by President Jagels, of the Summit Board of Trade. Mr. Carty responded briefly, and proceeded to open the Line by calling the roll of the wire chiefs in a most impressive manner. During the demonstration Mr. C. H. C. Jagels, Hon. Ruford Franklin, Dr. Alexander Humphreys, Hon. George H. Viehman, and Mr. J. W. Clift, editor of the Summit *Herald*, talked with a number of prominent men of California. Mr. Ralph E. W. Donges, chairman of the Public Utilities Commission of New Jersey, was to have talked with Mr. Harry Encill, of the California Commission's Examiner's Staff, but was unable to be present. His regrets were expressed by Mr. Carty, who congratulated the California Commission on the work it is doing and told Mr. Encill that this commission is considered by engineers throughout the country as a model in many respects. After the usual musical selections and the transmission of the voice of the Pacific Ocean, Mr. Carty closed the Line with the customary good-night roll call of wire chiefs, which ended in long and loud applause from the assembly.

The following motion, proposed by President Jagels and seconded by Mayor Franklin, was carried unanimously:

> We extend to Mr. Carty, Mr. Wiley, general auditor of the New York Telephone Company, the New York Telephone Company, and the American Telephone and Telegraph Company our appreciation for the wonderful exhibition which they have given us to-night.

In response Mr. Carty made a short address dwelling particularly upon the beauty of Summit and its surroundings, and the natural advantages which characterize it.

Dr. Humphreys spoke on "Reform and Regulation" with respect to the Public Utilities Commissions and the Interstate Commerce Commission, expressing the opinion that while the principle of Public Utilities Commissions is good, the administration of these Commissions leaves much to be desired. His attitude was distinctly one of disapproval of government ownership.

The other speakers were Mayor Franklin, Hon. Mark Sullivan, and Hon. Geo. H. Viehman, who observed that no other public service corporation had responded so heartily as had the Telephone Company to the desires of the public in the matter of service and rates.

Evening High School Teachers' Association

AT the ninth annual banquet of the Evening High School Teachers' Association of the City of New York, held at the Hotel Plaza on February 26, Mr. N. C. Kingsbury delivered an address on "The Development of a System" before an appreciative audience of about 320 persons. Mr. Kingsbury also acted as Master of Ceremonies for the transcontinental demonstration which followed. Chicago as well as San Francisco was on the line, and after Mr. Kingsbury's greeting to Mr. Bell at Chicago and Mr. Bates at San Francisco, the three audiences enjoyed an address on "Latitude and Longitude in Their Effect on Educational Ideals," by Mr. George E. Gallagher, president of the San Francisco Board of Education. Chicago then made its contribution to the transcontinental entertainment in the shape of an address on "How the Schools Repay Their Debt to the City," by Mr. John D. Shoop, superintendent of schools of Chicago. Mr. Ernest L. Crandall, president of the Evening High School Teachers' Association, responded from New York.

Mr. William G. Wilcox, president of the Board of Education of New York, then spoke on "Education and Business," to the three audiences, and conversations and music followed. When the Line

Transcontinental Telephone Demonstration at the Dinner of the Evening High School Teachers' Association, Hotel Plaza, New York, February 26, 1916

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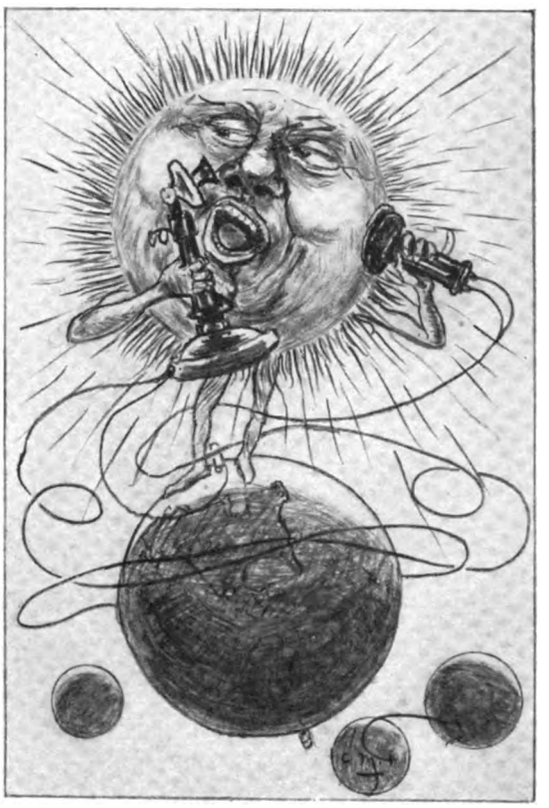
had been closed, the New York gathering was addressed by Hon. Marcus M. Marks on "The City and Schools," by Mr. W. E. Bartholomew, Inspector of Commercial Subjects, Department of Education of the State of New York, on "The Place of Commercial Subjects in Secondary Education," and by Tristram W. Metcalfe, of the New York *Globe*, on "The Past, Present, and Future of the Evening High Schools of New York."

The Sun Alumni Association

"THE Light of The Sun by Telephone Across the Continent" glowed in blithe effulgence on the night of February 28, when 125 members and guests of the Sun Alumni Association gathered at the Hotel Martinique for their twelfth annual dinner, and celebrated the occasion by sounding the possibilities of the Transcontinental Line.

The program carried this gentle hint: "Please note that this program is also a time-table and will be followed to the minute," and as a result it was precisely the hour set when Mr. Chester S. Lord, better known as "Boss Lord," president of the Association, opened the proceedings. The transcontinental conversations, which followed the address on "The Triumph of Science" and the usual roll call of wire chiefs, were carried on by Mr. Talcott Williams, Dean of the School of Journalism, Columbia University, and President Wheeler, of the University of California; by Mr. Chester S. Lord, and Mr. Edward P. Rainey, secretary to Mayor Rolph, of San Francisco; by Mr. Stephen T. Mather, vice-president of the Sun Alumni and Assistant Secretary of the Interior, and Mr. E. O. McCormick, vice-president of the Southern Pacific Railway; Mr. Collin Armstrong, chairman of the executive committee, and Mr. Howe, of the Wells-Fargo Company. Chicago, too, was cut in on the line and Mr. Mather talked with Mr. Joe Shehan, of the Chicago *Herald*. Mr. Don C. Buell, Clerk of the Court of Special Sessions, sang "Drink To Me Only With Thine Eyes," victrola selections were returned from San Francisco, and the roar of the Pacific terminated San Francisco's part in the evening's program. When the last wire chief had said "good night" the entire gathering rose from their seats in spontaneous tribute to the marvel which had been demonstrated.



Cover Design on Program of the Dinner of the Sun Alumni Association, Drawn by Charles M. Fairbanks, a Sun Alumnus and Member of the Salmagundi Club

Among the men of note who were present at the dinner and demonstration, besides those already mentioned, were: Mr. Robert Grier Cooke, president of the Fifth Avenue Association; Postmaster E. M. Morgan; Mr. Albert Payson Terhune; Mr. C. V. Van Anda, of the *Times;* Mr. W. H. Henderson, musical critic of the *Ladies' Home Journal* and the New York *Sun;* Professor Franklin Matthews, of the Columbia School of Journalism; ex-Judge Willard H. Olmsted, and Mr. Cyrus C. Adams, ex-Secretary of the National Geological Society.

Mr. Stephen Tyng Mather, Assistant Secretary of the Interior, gave a short talk on "The National Parks," which was followed by motion pictures of the Yosemite Valley and Yellowstone Park, explained by Mr. Robert Sterling Yard.

"Puck Outdone" is the verdict of the Sun Alumni on the subject of the Transcontinental Telephone Line, delivered in this rhyme:

> The miracle to-night
> By Puck, the merry sprite,
> Was first suggested.
> He thought that he was right
> According to his light:
> See how he's bested!

Flushing Business Men's Association

ABOUT eight hundred persons, among them some of the most prominent residents of the Borough of Queens, witnessed and took part in a demonstration of the Transcontinental Telephone Line which was the feature of the tenth annual dinner of the Business Men's Association of Flushing on February 29.

Mr. George W. Pople, president of the Association, in his introductory remarks stated "that the New York Telephone Company had exhibited a magnificent spirit of generosity in arranging for the Transcontinental demonstration, which was to be the big feature of the evening's entertainment." He then introduced ex-Judge Harrison S. Moore, who acted as toastmaster. Mr. Leimbach delivered the address on "The Triumph of Science," omitting the motion pictures until after the demonstration of the

Transcontinental Telephone Demonstration at the Twelfth Annual Dinner of The Sun Alumni Association, Hotel Martinique, New York, February 28, 1916

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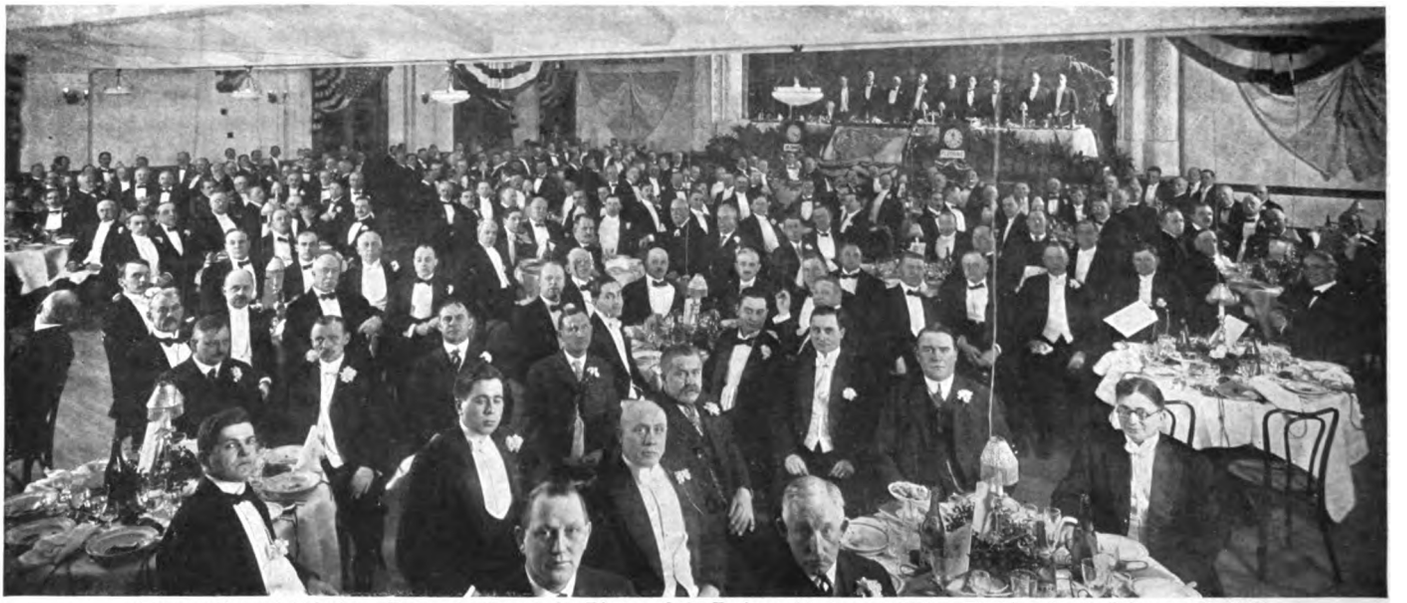

Transcontinental Telephone Demonstration at the Dinner of the Business Men's Association, Flushing, L. I., February 29, 1916

Line, as there was to be a second demonstration in Niagara Falls immediately after that at Flushing.

The usual music, roar of the Pacific, etc., were interspersed through the program of transcontinental conversations which were carried on by Mr. Pople; Hon. Eugene M. Travis, Comptroller of the State of New York; Mr. C. G. M. Thomas, president of the Queens Borough Chamber of Commerce; Hon. Robert Adamson, Fire Commissioner of New York City, and Hon. H. C. Johnson, State Tax Appraiser.

Mr. C. H. Lavington, local commercial manager at Flushing, who acted as master of ceremonies, and Mr. I. H. Wright, district manager, Suburban Long Island, received congratulations upon the success of the affair from Judge Frederick Crane, Congressman F. C. Hicks, Borough President Pounds, Hon. L. G. Holland, Highway Commissioner of Queens; Hon. W. R. Wilcox, ex-chairman Public Service Commission; County Judge B. J. Humphreys; Hon. Maurice E. Connelly, president of the Borough of Queens; Mr. Ellis Parker Butler, the author, and many others of the audience, whose prolonged applause had already conveyed the warm appreciation of the gathering as a whole.

University of Texas

THE Annual March Second Dinner of the New York Alumni of the University of Texas was marked this year by a very interesting demonstration of transcontinental telephony, by means of which over fifty members of the Alumni Association and their friends at the McAlpin Hotel were brought in touch with other alumni at Dallas and with the president of the university, at Austin, Tex. The circuit passed through Pittsburgh, Chicago, Kansas City, Oklahoma City to Dallas.

Conversations were carried on between numerous members of the New York audience and friends in Dallas. The University of Texas cheer was transmitted by the alumni at New York and returned by the Dallas men. Austin, Tex., was then cut in and President Battle, of the university, addressed the New York and the Dallas gatherings. The enthusiasm with which his remarks were received in both cities was extreme. Mr. G. B. Dealey, at Dallas, then spoke briefly to the New York assemblage, and was greeted by them with cheers.

When the Line was closed by a good night roll call of the intervening wire chiefs, the University of Texas cheer was given for the New York Telephone Company and its representative, Mr. Schmidt, giving evidence of the keen enjoyment which the demonstration of long distance telephony had afforded.

Princeton Alumni Association

APPROPRIATELY enough, the demonstration of transcontinental telephony held at the third annual dinner of the Princeton Alumni Association of Southern New York and Connecticut, was a triangular one, New York, Denver, and San Francisco being joined by the great strand. One hundred and thirty-five persons were gathered at the Princeton Club in New York on March 3, forty-five in Denver, and thirty in San Francisco.

Dr. John Grier Hibben, president of Princeton University, spoke from New York to Dr. Livingston Farrand, president of the University of Colorado, and to Mr. A. A. Mackenzie in San Francisco.

A full-blooded Piute Indian chief, who happened to be at the office of the Winnemucca wire chief, said a few words in his native tongue, evoking hearty laughter and applause from all three audiences.

Cheering and abundant applause also welcomed each verse of a song: "I Want to Raise My Boy to Go to Princeton."

Several Princeton alumni in the three cities conversed over the Line, the Princeton locomotive yell was given from New York and returned by Denver and San Francisco, and the climax of good feeling and deep enjoyment was reached when "Old Nassau" was sung by the three audiences in turn, New York singing the first verse, Denver following immediately with the second, and San Francisco with the third. The transmission was perfect, and the novelty of singing this old rallying song in this manner made a profound impression upon all three audiences.

Just before closing the Line, Mr. Casler, master of ceremonies, announced that a surprise had been arranged for the three audiences in the shape of five Princeton alumni who were present at the office of the wire chief in Salt Lake City. The announcement was received with a burst of applause, and President Hibben conversed briefly with Mr. Bamburger and Dr. Crichlowe, a classmate of Dr. Hibben, who spoke from Salt Lake City.

After the demonstration, Mr. John H. Rush, the Princeton football coach, made an address, dealing with the Princeton football team of last year and plans for the future. The guest of honor, Dr. John Grier Hibben, '82, president of Princeton, was then announced, to speak on "What Should Princeton Do to Gain a Year on Harvard." He began his remarks with the following words:

My mind is so dissipated that I cannot speak of any other matters save that which I have witnessed and been a party to this evening. I am struck with awe, yes, reverence you may call it, if you will, at this wonderful demonstration which has been guided so carefully and pleasantly by Mr. Casler and Mr. Schmidt. This method of education or instruction is the proper kind.

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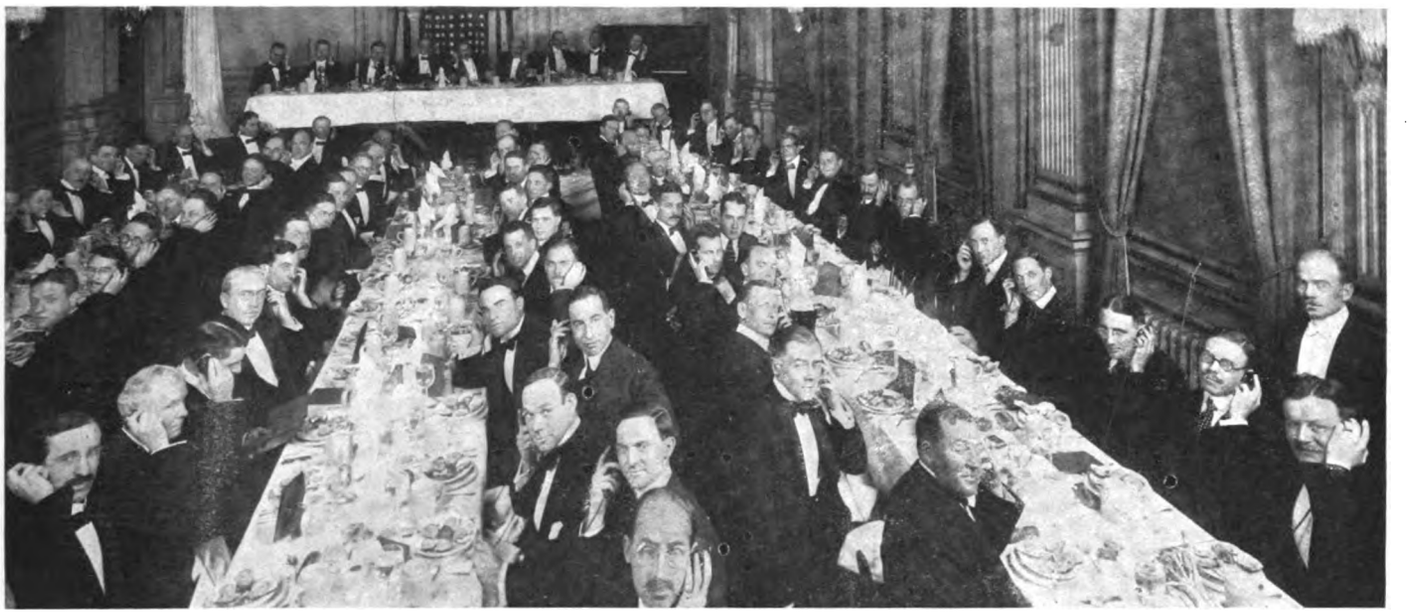

Transcontinental Telephone Demonstration at the Third Annual Dinner of the Princeton Alumni Association of Southern New York and Connecticut, Princeton Club, N. Y., March 3, 1916

It is so entirely different from the facts and principles which we gain from hearsay. We know to-night that this is reality—it has been demonstrated—we have been a party to it as Princeton men, etc., etc.

For thirty minutes President Hibben directed his remarks to the Transcontinental Demonstration and paid the highest tribute to the telephone industry.

University of Wisconsin Alumni Association

GRADUATES of the University of Wisconsin, assembled in New York, Milwaukee, and San Francisco, were joined by the Transcontinental Telephone Line on the evening of March 4, when a dinner was held by the Wisconsin Alumni Association of New York, at the Hotel Manhattan in honor of Charles R. Van Hise, president of the university. The gathering in New York numbered 150, in San Francisco 15 and in Milwaukee 110. The address on "The Triumph of Science" and the motion pictures were given in Milwaukee by Mr. Hicks, of the Commercial Department of the A. T. & T. Co., simultaneously with their production in New York.

The locomotive yell and the "'Varsity Toast" were exchanged between the New York and Milwaukee audiences. "The End of a Perfect Day" was sung by Mr. Phil Spooner, son of ex-U. S. Senator Spooner, from New York, and "Drink to Me Only With Thine Eyes" by Mr. George Powers, from Milwaukee, and "Dixie" was transmitted from San Francisco, all to the keenest delight and enthusiasm of the three audiences. Conversations were carried on by Mr. Herbert A. Heyn, president of the Association; Mr. H. O. Seymour, general manager of the Wisconsin Telephone Company; Dr. Charles Van Hise, president of the university; Mr. Theodore Hammond; Mr. William S. Kies, vice-president of the National City Bank and toastmaster of the evening; Mr. Paul Durant, in Milwaukee; Mr. Briggs, in San Francisco; Mr. Robert Friend, in Milwaukee; Mr. William Fries, in San Francisco; and a number of others.

"On Wisconsin" was transmitted from San Francisco and roundly applauded by New York and Milwaukee, and when New York sang "On Milwaukee" only "The Star-Spangled Banner," which concluded the program, was needed to give the final proof of the musical ability of the Line.

Transcontinental Telephone Demonstration at Dinner Given in Honor of President Charles R. Van Hise by the New York Alumni Association of the University of Wisconsin, Hotel Manhattan, March 4, 1916

Knights of Columbus

SAN JOSE, Cal., Los Angeles, and New York were connected by the Transcontinental Line for the benefit of the large assemblages of Knights of Columbus gathered at the three cities, on the evening of March 5. Four hundred and seventy-five were seated at the banquet of the Fourth Degree Knights of Columbus, Second District, State of New York, at the Hotel Astor, and in San José there were 450, in Los Angeles 250.

After an address on "Our Fair Opportunities" by the Right Rev. Mgr. Thomas J. Shahan, D.D., Rector of the Catholic University, Washington, D. C., Hon. Victor J. Dowling, Justice of the Appellate Division of the Supreme Court, who was toastmaster for the evening, referred to Mr. Vail in the following words:

Mr. Theodore N. Vail, the head of the telephone industry and a representative American, true to the soil, who by his persistent and untiring efforts has

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Transcontinental Telephone Demonstration at the Banquet of the Fourth Degree Knights of Columbus, 2d District, State of New York, Hotel Astor, March 5, 1916

made American telephony what it is to-day. The advantage which was given to the business by his leadership, the growth and development of this country which was exhilarated by the success of this Transcontinental Telephone Line will now be described by Mr. H. J. Carroll.

Mr. Carroll then gave the address on "The Triumph of Science." As San José was not ready to proceed with the demonstration of the Line, Mr. W. F. Larkin, State Deputy of the New York Knights of Columbus, spoke on "Knights and Preparedness." The Line was then opened and conversations were carried on, San Francisco, Los Angeles, and San José all participating, and "Wake Up, America" and "Mother Machree" were sung from New York. Among the guests who spoke over the Line were Hon. Victor J. Dowling, Right Rev. Thomas J. Shahan, Mr. McGinley, Mr. William P. Larkin, Mr. W. J. Boyd, vice-supreme master, New York; Rev. Father Wynn, novelist and teacher; Rev. Joseph Mulry, S. J., president of Fordham University; and Dr. F. A. Chicherio, Master of the Knights of Columbus.

As the Line was closed after the transmission of the roar of the Pacific and the victrola rendition of "The Star-Spangled Banner," the guests rose to their feet with a long round of enthusiastic applause. The toastmaster, when he could gain control of the assemblage, gave voice to their spirited feeling in words of sincere appreciation.

Western Union Educational Society

THE Western Union Educational Society of New York were "educated" in the wonders of the telephone at their Beefsteak Dinner held on March 9 at 24 Walker street. Two hundred members of this organization "got together" with 200 members of the Western Union Electric Club in Omaha, and 500 of the Western Union Efficiency Club in San Francisco.

When the Transcontinental Telephone Line was opened, the entire New York gathering sang "America, I Love You" to the thorough enjoyment of the Omaha and San Francisco audiences, who applauded vociferously.

Mr. A. G. Saylor, Mr. M. T. Cook, and Mr. W. J. Lloyd, general managers of the Eastern, Pacific, and Mountain Divisions, respectively, of the Western Union Co., chatted together over the Line. Mr. G. E. Palmer, chief operator in New York, spoke with Mr. D. G. Ingold, chief operator in San Francisco, and surprised the audiences by sending his greetings in Morse code over the Transcontinental Line. The

Transcontinental Telephone Demonstration at the Western Union Educational Society's Beefsteak Dinner, 24 Walker Street, March 9, 1916

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Transcontinental Telephone Demonstration at the Twenty-second Annual Banquet of The Bronx Board of Trade, in McKinley Square Casino, March 11, 1916

presidents of the three organizations which were joined on this occasion by the Long Line—Mr. S. B. Haig at New York, Mr. H. J. Jeffs at San Francisco, and Mr. R. M. McDonald at Omaha—exchanged greetings, as did also the secretaries, Mr. F. A. Hoag, Mr. C. E. Payne at San Francisco, and Mr. W. J. Keane at Omaha.

Musical selections, including a banjo medley by Mr. W. J. Dunn, and conversations between a number of other members of the several associations tested the numerous possiblities of the Line, which was closed at length with a "good night" roll call of the Transcontinental wire chiefs.

Bronx Board of Trade

A TRANSCONTINENTAL demonstration was held on March 11 for the 600 members and guests of the Bronx Board of Trade, who assembled at the McKinley Square Casino, 169th street and Boston Road, for their twenty-second annual banquet. Mr. James Brackenridge, Bronx district commercial manager, acted as master of ceremonies, conducting the usual program of transcontinental conversations, music, etc.

After an exchange of greetings by Mr. E. W. Rosenquest, president of the Bronx Board of Trade, and Mr. Warren Manley, district secretary of the U. S. Chamber of Commerce, Governor Whitman took the instrument and chatted with Hon. Hiram Johnson, Governor of California. As he terminated the conversation, Governor Whitman turned to the audience before him and assured them that if anyone doubted the reality of this connection with far-off California, he knew Governor Johnson very well and he could vouch for it that the voice they heard over the wire was none other than Governor Johnson's.

Hon. Geo. M. S. Schulz, surrogate, Bronx County, talked with Mr. Rainey, secretary to Mayor Rolph, of San Francisco, and Dr. John H. Denbigh, principal of Morris High School, spoke with his brother, Mr. Basil Denbigh, and nephew, Mr. Robert Denbigh, in San Francisco.

The sound of the Pacific waves, and the "good night" roll call of wire chiefs ended the demonstration, and the cordial and prolonged applause of the audience, followed by President Rosenquest's words of appreciation, bore witness to the success of the program.

Columbia University

A TRANSCONTINENTAL demonstration was held at Earl Hall, Columbia University, on March 14, when the Schools of Mines, Engineering, and Chemistry of Columbia and the College of Civil Engineering, of the University of California, spent the evening together over the Transcontinental Line. Students, faculty, and guests to the number of 400 were gathered at New York, and in Berkeley, Cal., 250.

Dr. Michael Idvorsky Pupin spoke on the functions of the Pupin loading coil in telephony, and in the course of his remarks touched upon the high ideals and wonderful accomplishments of the American Telephone and Telegraph Company and associated companies.

The lecture on the Transcontinental Line was delivered by Mr. Schmidt, who referred to Dr. Pupin's part in the development of the art of telephony thus:

> In the words of President Vail, it is the cumulative effect of improvements, great and small, in telephone, transmitter, line, cable, and every other piece of apparatus required in the transmission of speech. Among them is that epoch-marking invention of Dr. Michael Idvorsky Pupin, professor of electromechanics at this great university. . . . The working out of the problem of the Pupin coil was an achievement of the highest order, which must always shed luster upon the fame of the distinguished scientist and upon the university with which he is connected.

The transcontinental program was opened with an exchange of cheers between Columbia and California, which was followed by conversations between Mr. Frederick A. Goetze and Prof. C. Derleth, deans of the colleges participating; a number of other professors of the two institutions; the presidents of the senior classes of Columbia and of the University of California; the two presidents of Tau Beta Phi; and the captains of crew of Columbia and California (during this conversation Captain Bratton, of Columbia, invited Captain Hotchkiss, of California, to row a match race on the Hudson River next June), "Marching Song," "Stand Up and Cheer," "All Hail," and other songs of the two universities were sung over the Line, and "The Star-Spangled Banner" closed the demonstration.

Motive Power Association

ABOUT one hundred persons used the Transcontinental Line at the annual meeting and dinner of the Motive Power Association of the Interborough Rapid Transit Company, held on March 15 at the Hotel McAlpin.

After the address on "The Triumph of Science," and synchronized talking "movies" of Mr. Watson and the early days of the telephone, Mr. Carty opened the Line. Mr. Frank Hedley, General-Attorney Quackenbush, Mr. Geo. Pegram, chief engineer, Mr. H. G. Stott, and Mr. E. F. Gaynor conversed with prominent officials of the United Railroads of San Francisco.

Harry Lauder's "I Love a Lassie," "The Star-Spangled Banner," and the roar of the Pacific Ocean were transmitted, and the Line was closed with a roll call of wire chiefs.

Mr. Hedley and Mr. Carty were the speakers of the evening. Just before the meeting was adjourned Mr. Stott, president of the Association, called upon the audience for a vote of thanks to Mr. Carty and the Telephone Company "for the most marvelous and entertaining exhibition of transcontinental telephony," to which the audience responded with enthusiasm.

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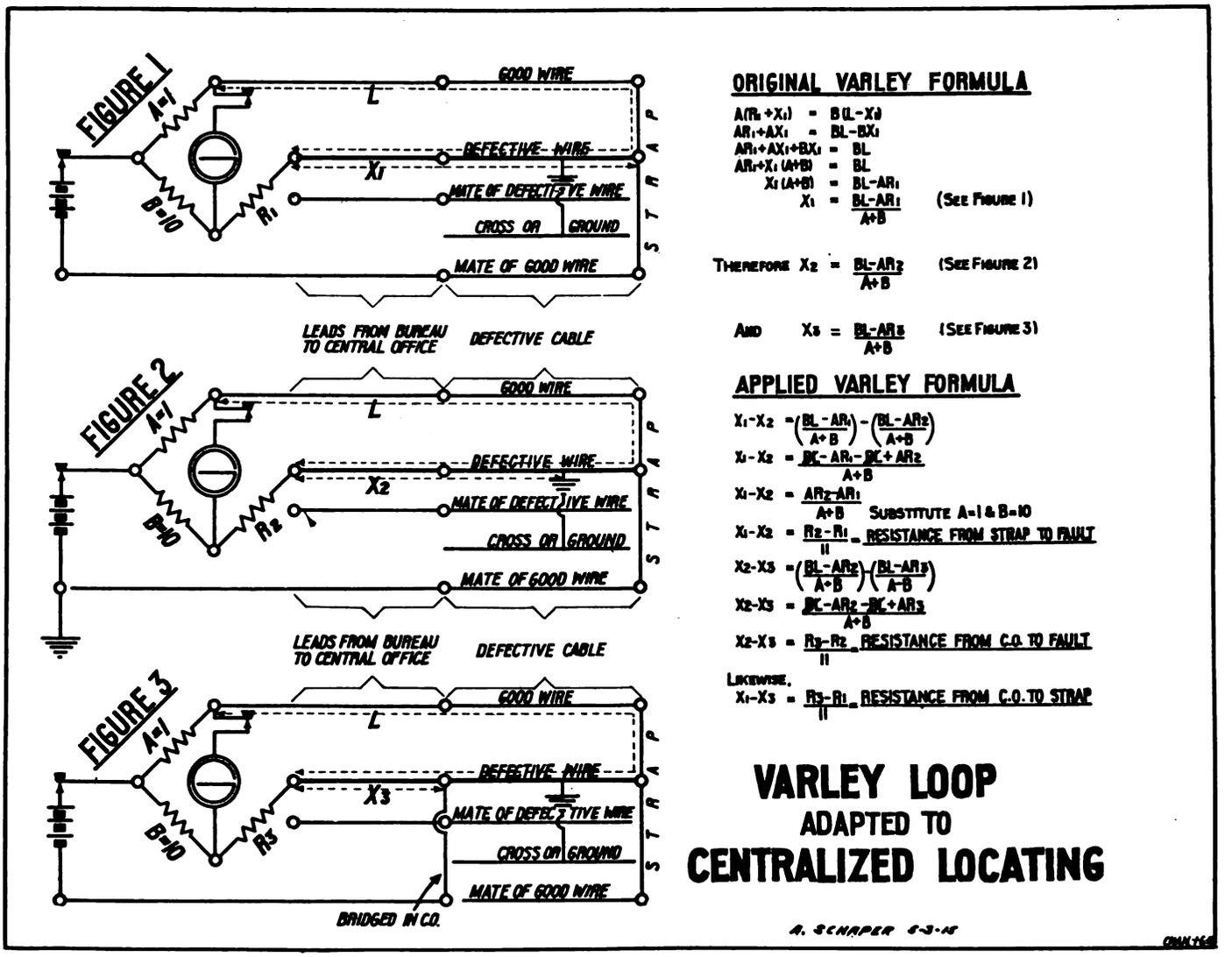
Locating Cable Trouble



WE have had a number of inquiries from people in other departments regarding our method of locating cable trouble from the central locating bureau. The accompanying diagrams and formulæ show the theory and evolution of the Varley Loop, and how it is applied. This method requires only one set-up of the Wheatstone bridge for all three readings, and gives the individual resistance of the defective wire in the cable, eliminating the resistance of the lead on the defective wire from the locating bureau to the main frame in the central office, by simply applying the formula.

Example: Varley No. 1, 3365
Varley No. 2, 3843
Varley No. 3, 5167

$\frac{3843-3365}{11}$ = 43.45, the resistance from the strap to the fault

$\frac{5167-3843}{11}$ = 120.36, the resistance from central office to fault

163.81 is the total resistance of the cable.

Now by taking the length of the cable in feet from the central office to the strap and dividing by the total resistance of the cable, we obtain the number of feet per ohm of that particular cable at the moment the location was made. Then multiplying the number of feet per ohm by either the resistance out from the central office or back from strap, whichever is most convenient, the location of the fault may be calculated within a few feet.

This formula can be simplified and the liability of error reduced by using a ratio of 1 to 9 in the A and B arms of the bridge, in which case the division by 11 is avoided, and the division by 10 accomplished by simply pointing off one place. In order to get the 1 to 9 ratio, the resistance of one of the coils in the B arm must be changed, as the Wheatstone bridge usually supplied by the manufacturer is arranged for a ratio of 1 to 10, 1 to 100, etc.

A. SCHAPER,
Testing Department, L. I. Division.

Venting His Feelings

IT is always a pleasure for the Company to receive such complimentary letters as one just sent by Mr. J. A. Voice, secretary of the Pasbach-Voice Lithographing Co., Inc., of New York. "Rainy days have no terrors for the man who telephones," is a truth which many business men believe, though all do not take the time and trouble to give expression to their belief as Mr. Voice has done. The "Talk—Don't Walk" method of doing business applies to snowy and sunshiny days as well as to rainy days. Mr. Voice's letter follows:

This is just the kind of a day that one feels inspired to write you a complimentary letter concerning your wonderful system. The rain is falling, the streets are slippery, and all our various wires and connections are busy throughout the entire establishment.

It is really remarkable how one can buy, sell, and give orders throughout the various departments, *all without moving from one's desk*—so we just had the inclination to give vent to our feelings.

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Telephone Club and Other Doings

Madison Square Commercial Dinner

THE second annual dinner of the Madison Square local commercial office was held on Thursday, February 10. Covers were laid for twenty-eight and the guests of the evening were Messrs. M. J. King, district commercial manager, W. F. Reese, Madison Square local commercial manager, and H. L. Wilkins, Dey street local commercial manager.

Following the dinner, the party adjourned to the billiard room, where Messrs. Reese, Wilkins, and Glantz demonstrated their cleverness with the cue. Mr. McDermott later taught an appreciative class the mysteries of "Drop Dead" on the pool table. Mr. Hopper carried off first honors on the bowling alley.

The Committee was composed of W. H. Nodes, H. W. Graham, B. F. Sharpe, and W. H. Eaton. Those present were Special Agent C. W. Nonamaker, and Agents D. Hopper, F. H. Redhead, J. T. Barker, J. A. Sheridan, W. J. Kelly, E. H. Brown, C. W. Struthers, D. Glantz, F. C. McDermott, R. W. Sanial, H. S. Mason, C. S. Lunz, S. J. Canning, J. H. Schaum, H. B. Rogers, R. F. Cornwell, Jr., G. W. Coman, H. S. Cox, J. A. Kennedy, and G. W. Davagan.

The gathering represented the entire Madison Square staff of agents with the exception of Mr. J. R. Shannon, who was detained at home because of illness.

Inspection Force, M.-B.

ON February 18, 1916, the inspection force of the Plant Department, Manhattan and Bronx, held their second entertainment and dance of the season.

A very pleasing program was presented, consisting of a comedy sketch, violin solo, character and sentimental songs. The music for the dance was furnished by an orchestra of seven pieces, led by J. J. Kehoe, of the Inspection Force.

Refreshments were served during the evening, and at 10.30 P.M. a tasty and refreshing luncheon was served in the dining-room.

Plant Accounting

ON the evening of February 21 the members of the Plant Accounting force and their friends held the First Annual Plant Accounting Night.

In all, about 600 people attended, 150 of whom dined at the Club. After dinner an entertainment was given by the members of the Plant Department as follows:

Piano Solo.....Miss R. Gillis
Recitations.....Miss E. Sprich
Violin Solo.....Mr. J. P. Quin
Vocal Solos, the Misses L. Brogelman, H. Reiners, E. Keane, R. M. Kem, I. Hunter, A. Schaeffer, E. Ten Eyck, E. Race, and Messrs. J. P. Quin and LeRoy Carner. The accompanists were, Miss R. Gillis, Miss E. Sullivan, Miss Belle Kortz, and Mr. George Parker.

The audience joined in the choruses of several popular songs. A basketball game was played between teams representing the Plant Department and the Central Presbyterian Church of Brooklyn, resulting in a score of 31 to 19 in favor of the Plant Department. Dancing followed.

The entertainment was arranged for by the Welfare Committee of the Plant Accounting force.

Pinochle

ON the night of Friday, February 25, the second pinochle tournament of the season was held.

In spite of the inclement weather sixty players sat down in the Assembly Room to two and a half hours of friendly competition at this popular card game.

Ten prizes were awarded, including a "booby." The latter distinction was won by Mr. P. E. Mahoney, of the Tremont commercial office, who, in recognition of his modest desire not to "hog" everything, was presented with a twelve-pound ham.

The winners were permitted to select prizes from those provided in the order of their standing.

The prizes were won as follows:

1st, John J. Worth, L.I., Silver smoker set.
2d, E. Crager, L. I., Order on Young Bros., $3.50.
3d, C. J. Murphy, Coin Box, Sterling Silver military brushes.
4th, W. J. Miller, Man., Waterman fountain pen.
5th, E. L. Cummings, Man., Silk Umbrella.
6th, J. Nash, Man., Cut Glass and silver tobacco jar.
7th, Sumner Jones, Man., Gold stick pin.
8th, A. J. Pope, Man., Box of cigars.
9th, Charles Nuttman, Man., Mark Cross bill fold.
10th, P. E. Mahoney, Bronx., Ham.

Lively Evening for Long Island Plant

FULLY five hundred plant employees from the City of Churches attended the get-together of the Long Island Plant Department on Saturday evening, February 26. The most interesting event of the evening was the basketball game played between teams of the Equipment and the Construction Departments, for the trophy donated by the department heads. The Construction team was victorious, defeating its opponent by the score of 19 to 9 in a clean and well played game.

The bowling honors went to E. Miles, wire chief of the Far Rockaway exchange. Along with the honors came a very energetic first prize in the person of a nice fourteen-pound goose. His gooseship was not allowed to claim the interest unchallenged for long, however, as the second and third prizes for this event proved to be two lively chickens, won by Wilbur and Turner respectively, of the Construction Department. Before specifications for the new Plant barnyard could be drawn up, the data changed by the addition to the force of two toplofty roosters, first prizes for the pool and billiard tournaments. Robert West and W. B. Sammis, of the Construction Department, were the new recruits to the poultry industry, whose prowess in pool and billiards brought them to this rural pursuit.

Just before the buffet luncheon which concluded the evening, another prize was presented to the person whose badge contained the lucky number. The fat and squealing token of good luck proved to be a sixteen-pound suckling pig and the fortunate man was our friend Harry Murray, of the Engineering Department. Judging from the expression on his face when he almost squeezed poor "Tootsie" to death, we assume Mr. Murray was more than pleased.

Blue Bell Orchestra

MEMBERS of the Telephone Club and their friends who attended the concert given by the Blue Bell Orchestra on the evening of February 29 will long remember the occasion as a pleasant and enjoyable one.

The orchestra, whose members are all employees of the Company, rendered several high-class selections in a manner that displayed efficient training and spoke highly of the ability of its members and the director, Mr. L. Allan Scott.

The orchestra was assisted by Miss Marguerite Hazzard, soprano; Miss Ida F. Volk, pianist, and Mr. James M. Roche, tenor.

In "Chanson Provençale" (Dell' Acqua), and a group of three other songs, Miss Hazzard displayed a voice of real quality and excellent control. She was forced to respond to an encore.

The audience heartily displayed its appreciation of Miss Volk's work, both as soloist and accompanist. One of the features of the evening which caused considerable admiration was the fact that she accompanied the singers without notes.

Mr. Roche, of the Plant Department, was heard in several very interesting songs. His fine tenor added much to the pleasure of the evening and he was greeted with hearty applause.

The concert was attended by a large and appreciative audience, and many expressed the hope that there would be another in the near future.

Dancing followed, the music being furnished by the Blue Bell Orchestra.

The Empire City Walk

(NOTE—This is *not* a one-step)

JUST to show their supreme indifference to the Interborough, and for a few other reasons too trivial to mention, thirteen sturdy lads of the Empire City Subway Company walked from the office at Spring and Wooster streets to Fordham Road, a distance of twelve miles, on the afternoon of Saturday, February 26, 1916. This statement, taken thus in itself, so to speak, is in no wise startling. What is a little matter of twelve miles, that one should deem it worthy of more than passing consideration? Of course, given a day or so in which to do it, almost anyone could walk twelve miles, provided he were not *too* much out of condition. But *this* was a race! Consider with me for a moment all that this implies. Picture to yourself one dozen athletes, all in the pink of condition, at 1.30 P.M. of a beautiful February afternoon. They gather on the sidewalk at 138 Spring street, toeing the mark, expectant and eager to be off—straining at the leash, as it were. The word is given! They are off!

Due east on Spring street to Lafayette they go, arms flying, legs plying—how the wind does blow! North on Lafayette to Madison and then—at Madison avenue and Sixtieth street they swing to the west, then north into Fifth avenue. Oh, what a picturesque sight as they tear up the Avenue, scattering traffic right and left, encouraged by the hoarse shouts of the multitudes and the cries of their followers, who, riding at ease in the Company's automobiles, look upon them with envy. About twenty of us rode the full course, carelessly and gracefully draped upon various parts of the "pump wagon." If I had it to do over again, methinks I should prefer riding in a limousine. But to resume.

The half-way mark is at Fifth avenue and 106th street, and here everyone gathers to see them go by, and to note the time. It has been wagered that some can do the first six miles in one hour. Will they do it? We wait, watch in hand, while the minutes creep on toward two-thirty. At last a flying figure is seen approaching rapidly from the Sou' Sou' East. It is Harvey, the w.k. three-quarter mile walker. Jess Willard, doing his roadwork in Central Park, has nothing on him. It is two-thirty and he is coming like a streak of —— well, nearly as fast as that, anyway. He flashes by, borne along by the cheers of the frenzied spectators. He has done the first six miles in 1 hour, 1 minute, 7½ seconds.

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Close in his wake is DeMersman, with the rest following along at varying intervals. East on 120th street they go, then up Madison avenue again to the Harlem River, across the Bridge, into Mott avenue, and thence to the Grand Concourse.

They are now on the homestretch, and excitement reigns supreme. The race for first honors is between Harvey and DeMersman. Who will win? Read a little further, and you will find out.

The hands of my watch point to 3.25 when over the brow of the hill the same flying figure which flew at 106th street flies into view. It is—it sure *is!* As the hands of the aforesaid watch point to 3.31½ P.M., Harvey flashes over the line, amid scenes of indescribable confusion.

The following is the official summary of the match, which was promoted by Jack Glennon. This feat puts him in a class with "Tex" Rickard. The judges were Messrs. Swain, Weinberg, and Heath, while the office of timekeeper was capably filled by Sanford.

SUMMARY

Harvey	2 hrs.	1 min.	32 secs.	First
DeMersman	2 hrs.	2 mins.	40 secs.	Second
Link	2 hrs.	12 mins.	12 secs.	Third
Goetz	2 hrs.	14 mins.	24 secs.	Fourth
Giordane	2 hrs.	15 mins.	2 secs.	Fifth
Kuhnell	2 hrs.	19 mins.	40 secs.	Sixth
Bohan	2 hrs.	20 mins.	0 secs.	Seventh
Orr	2 hrs.	24 mins.	12 secs.	Eighth
Hall	2 hrs.	27 mins.	0 secs.	Ninth
Sheffer	2 hrs.	33 mins.	34 secs.	Tenth
Spizzi	2 hrs.	40 mins.	41 secs.	Eleventh

First Head Pin Tournament in Paterson

THE telephone employees' Get Together Club in Paterson, N. J., introduced an innovation in that city by holding a head pin bowling tournament on the night of March 2. About one hundred employees took part in the games. The prize-winners were:

H. King	89
J. Martin	88
J. Hudert	85
P. Boggs	85
G. Ebner	85
H. Briggs	83
W. Quinlan	81
R. Wood	79

There was also a five-men team event between Paterson, Passaic, Hackensack, and the cable department. This resulted in a victory for the Hackensack team, with the following scores:

McGowan	157
Cumming	160
Rogers	199
Montigel	168
Stebbins	149
	833

Pool and shuffleboard was very much in evidence and there were many hotly contested matches. Refreshments were served and it was the general opinion of all present that it was a great night. It is the intention of this hustling club to add the head pin bowling to their already long list of annual affairs.

Bowling in Buffalo

IN a bowling contest in the Manufacturers' League in Buffalo, the New York Telephone Company's employees have made a clean sweep. The scores follow:

	1	2	3	4
Curtiss	216	199	115	146
O'Brian	145	165	181	177
Weick	113	...	...	190
Brown	165	170	184	184
Scheffer	162	152	...	...
Spear	...	...	115	...
Huks	...	225	168	135
Totals	797	911	785	833

The lead which they had over their competitors will be seen by the following totals:

West Disinfectant	832	680	779	909
Otis Elevator forfeits				
Allen Carpet Co	804	825	789	854
Standard Plant	868	670	748	766
Otis Feds	703	662	763	815
Buffalo Electrotype	710	828	719	803
U. S. Hame Co	699	742	773	635

Get Together Dinner

SOME seventy employees of the A. T. & T. Co., from the General Plant Offices of the Long Lines Department, gathered for a "Get Together Dinner" on the evening of March 9. The spirit of good fellowship, traditional with telephone men, prevailed and they "got together" from the tap of the first Bell. A square meal from a square table made them feel that the sphere on which they rotate is pretty much on the square after all. During the feast the song written by F. G. Nelson, dedicated to the Transcontinental Line and entitled "We Almost See Their Faces," was rendered (limb from limb), with Mr. Percival officiating at the piano. Nicotine spikes of a very dark hue were also distributed, which are of themselves gloom dispellers.

The menu was very appropriately and humorously gotten up in the form of Routine Instructions which made everyone feel very much at home, and was the cause for so much laughter it was necessary to forego eating until the hilarity subsided.

After the dinner, some lively events in bowling, pool, and billiards were run off.

The "Preliminary Bowling Bout" (to steal the heading from the program) was between the Masked Marvels. Someone was unkind enough to remark that the Marvels (Messrs. Berrer and Jacobs) did not need masks, but we don't mention that, being naturally tenderhearted. Their respective scores were 62 and 83. It was almost like giving the pin boys a day off. The high honors were carried off by Mr. Mines with a score of 213. He attributes his success to the use of duplex (eye) glasses.

The billiard matches were interesting, but as for the games of pool, there's not much to be said. We cannot term them matches, for a match is a light, and light is inspiration, and there was nothing inspiring about the pool "games."

ANANIAS.

"Old Guard" Dine in Albany

SEVENTY-TWO employees of the old Hudson River Telephone Company, which up to 1909 operated the territory that is now the Hudson Division of the New York Telephone Company, assembled at the Hampton Hotel, Albany, on Saturday evening, March 11, for an "Old Guard" dinner.

Mr. Walter B. Butler, former auditor of the Hudson River Telephone Company, acted as toastmaster. He gave an account of the present activities of many of the older employees both in and out of the Company.

Mr. James H. Manning, former president of the Hudson River Telephone Company and now a director of the New York Telephone Company, was the next speaker. Mr. Manning gave a very interesting talk on the history of the telephone business in Albany and in the territory that is now the Hudson Division, telling of the consolidation of various small companies into one unit as the Hudson River Telephone Company. He told of events leading up to the erection of the new Albany Building which was completed in 1915.

Mr. Lewis S. Greenleaf, former general manager of the Hudson River Telephone Company, told of the building of the first toll lines and the installation of modern equipment, including selective ringing and the replacement of the old instruments. He gave a very interesting history of the technical development of the telephone.

Mr. J. J. Fitzsimmons, former treasurer, spoke on the early history and, at considerable length, commended the broad-minded policy of the New York Telephone Company.

Mr. W. B. Eddy, former district manager, Albany, and now special agent, Commercial Department, and Mr. Willis Hills, former district manager, Troy, and now district manager, Kingston, gave interesting bits of history in a humorous vein.

As each guest entered the room he was presented with a paper hat, and the dinner opened with the singing of "America." During the evening many old-time songs were sung and old acquaintances were renewed between people, many of whom had not been together in a number of years. Everywhere were heard stories of early experiences. The gathering included many people who had been identified with early telephone development, some of whom left the company to take up other lines of work. Because of the success of this gathering, it was decided to make the dinner of the "Old Guard of the Hudson River Telephone Company" an annual event.

The dinner was held in charge of the following committee: Walter B. Butler, J. Somes McClellan, Lewis S. Greenleaf, James J. Fitzsimmons, W. B. Eddy, and C. M. Walrath.

The following were present:

Thomas J. Ahern, Fred Arland, W. I. Ayres.
E. J. Bannigan, Paul Berry, George Boyle, Max Bradt, W. B. Butler.
John Carlton, Jas. Clemens, M. W. Cole, F. D. Cowdery, F. M. Cozzens, J. N. Crocker.
W. J. Davis, J. Degnum, J. J. Denn, J. Drum, E. J. Dunn, F. E. Dunphy.
W. B. Eddy, M. J. Eitleman.
J. C. Fagan, Jas. J. Fitzsimmons, Tom Fraser.
Geo. A. Garland, W. J. Garland, L. S. Greenleaf.
Frank Hagey, Fred Hemingway, J. P. Hill, Willis Hills, Guy A. Hilt, C. F. Hoff, John Hoff, E. J. Houlihan, John Hutchens.
John Kehoe.
Fred Lay, Harry Lipman, P. J. Lumley.
T. Mahar, Frank Mahon, J. Malone, Jas. H. Manning, A. Many, W. J. May, J. S. McClellan, T. McCarty, Jos. McGuire, Jas. McKiernan, Wm. J. McNamara, C. Meyer, Henry Miller.
F. W. Newman, W. Norris.
John O'Brien.
Geo. J. Phillips, W. A. Pratt, D. J. Prest.
Stephen Rankin, A. S. Reynolds, G. O. Rouhow.
Frank Slattery, Henry Snow, J. C. Swartout.
S. P. Taylor, J. W. Thompson.
C. M. Walrath, W. F. Weiser, C. E. White, M. Wilcox.

Rochester Plant Celebrates Washington's Birthday

THE fourth annual midwinter picnic of the Equipment Department of the Rochester District was held February 22, at the Rochester office. A theater party in the afternoon was followed by a dinner at the Plant office. The entire dinner was prepared by the men of the Plant Department and was served by several charming young ladies (!), who under ordinary occasions are engaged as wire chiefs or district foremen.

The toastmaster, Mr. Bruce, district equipment supervisor, Rochester District, introduced the program of the evening by proper remarks. Mr. Jacobs, division plant superintendent, and Mr. Banks, division equipment superintendent, gave the men many encouraging words regarding their loyalty and excellent work of the past year. Short talks were also given by Mr. Bell, of the Buffalo District, and Mr. Baxter, of Rochester. Mr. Spaulding, wire chief at Warsaw, spoke on the life of Washington and its teachings.

A wireless outfit was installed and messages from important personages in Europe and America, regarding the latest war news, were received; notwithstanding the fact that languages were used which no one understood, the news was considered very reliable.

An orchestra, composed of men from the Equipment Department, furnished music. Vocal solos were given by Messrs. Hunter and Boorman, and a mandolin duet by Messrs. Simes and Fisher helped to make the evening enjoyable. An intercepted conversation over the tie-line between Chase and Genesee wire chiefs furnished much amusement.

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NEW YORK TELEPHONE COMPANY

GENERAL OFFICES, 15 DEY ST., NEW YORK

U. N. BETHELL, President
F. H. BETHELL, Vice-President
H. F. THURBER, Vice-President
FORD HUNTINGTON, Vice-President
WALTER BROWN, Secretary & Treasurer
J. L. SWAYZE, General Counsel
C. T. RUSSELL, General Solicitor
R. V. MARYE, General Attorney

J. A. STEWART, General Manager
J. S. WILEY, General Auditor
E. F. SHERWOOD, Chief Engineer
H. C. CARPENTER, Engineer
T. P. SYLVAN, Asst. to Vice-President
E. A. GURNEE, Asst. Treasurer
WALDRON HOPPINS, Asst. Secretary
J. S. KENNEDY, Secretary, Employees' Benefit Fund Committee.

COMMERCIAL DEPT.

J. S. McCULLOH
General Com'l Supt.

W. F. BAKER
Asst. to Gen'l Com'l Supt.

A. D. WELCH
General Com'l Engineer

R. S. SCARBURGH
Advertising Manager

J. LENIHAN
Collection Attorney

PLANT DEPT.

G. C. ALLEN
General Supt. Plant

A. W. ALLEN
Supt. Buildings & Supplies

J. C. RENNARD
Real Estate Manager

W. T. GURNEE
Plant Accountant

TRAFFIC DEPT.

J. H. GORDON, Jr.
General Supt. Traffic

R. H. BOGGS
Traffic Engineer

H. G. GREENE
Manager Public Telephones

A. D. SCOVEL
Mgr. Traf. Inspection, M.-B.

ACCOUNTING DEPT.

P. O. COFFIN
Auditor

J. A. KENNEDY
Auditor of Disbursements

A. J. NORMAN
Auditor of Receipts

C. H. GROVER
Supervisor of Methods

Manhattan-Bronx & Westchester

J. R. POLLOCK
Division Com'l Manager
15 Dey Street

Manhattan-Bronx & Westchester

BURCH FORAKER
Division Plant Supt.
24 Walker Street

Manhattan-Bronx

H. J. SCHULTZ
Division Supt. Traffic
15 Dey Street

Westchester

M. H. ORTH
Division Supt. Traffic
40 South Fifth Ave.
Mt. Vernon

Lower Manhattan

L. F. HALSTED
Division Auditor Receipts
24 Walker Street

Upper M.-B. & Westchester

E. A. GIRARD
Division Auditor Receipts
2033 Fifth Avenue
New York

Long Island

H. W. DRAKE
Division Com'l Manager
81 Willoughby Street
Brooklyn

Long Island

P. D. HONEYMAN
Division Plant Supt.
547 Clinton Avenue
Brooklyn

Long Island

G. L. YATES
Division Supt. Traffic
81 Willoughby Street
Brooklyn

Long Island

A. W. DEAS
Division Auditor Receipts
81 Willoughby Street
Brooklyn

New Jersey

H. G. KERR
Division Com'l Manager
281 Washington Street
Newark

New Jersey

I. J. THORP
Division Plant Supt.
281 Washington Street
Newark

New Jersey

G. H. MERRILL
Division Supt. Traffic
281 Washington Street
Newark

New Jersey

C. H. LEONARD
Division Auditor Receipts
281 Washington Street
Newark

Hudson

J. A. JAMISON, Jr.
Division Gen'l Manager
Telephone Building
Albany

Hudson

E. H. POWLEY
Division Plant Supt.
74 Chapel Street
Albany

Hudson

E. G. ANDERSON
Division Supt. Traffic
Telephone Building
Albany

Hudson

J. P. HILL
Division Auditor Receipts
Telephone Building
Albany

Central

D. C. COX
Division Gen'l Manager
321 Montgomery Street
Syracuse

Central

F. J. CHESTERMAN
Division Plant Supt.
321 Montgomery Street
Syracuse

Central

H. H. KENNEDY
Division Supt. Traffic
321 Montgomery Street
Syracuse

Central

L. A. WILCOX
Division Auditor Receipts
321 Montgomery Street
Syracuse

Western

C. A. SPAULDING
Division Com'l Manager
Telephone Building
Buffalo

Western

P. O. JACOBS
Division Plant Supt.
Telephone Building
Buffalo

Western

J. J. WELCH
Division Supt. Traffic
Telephone Building
Buffalo

Western

H. W. GAUL
Division Auditor Receipts
Telephone Building
Buffalo

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WITH a reasonably satisfied public; with a reasonably liberal public; with a reasonably inclined federal, State and municipal control and regulation; without any onerous or unreasonable demands in sight or probable; with a normal business requiring only normal amounts of future capital; with a system sufficiently in advance of existing conditions to meet all possible demands or emergencies; with a business of such a nature that it makes the most economical "servant" for social or commercial intercourse, the first to be employed, the last to be discharged; with an operating staff from office boy to senior executive, from the newest to the oldest, who look upon the system as their system, who are jealous of its reputation and zealous in support of it; who have a keen interest in its improvement and development; who believe that their success and the Company's success are inseparable, who are never satisfied except with something better and who recognize their obligations to the public—with all these, we should look forward with confidence to the future.

For the Directors,

THEODORE N. VAIL,

President.

From the Annual Report for 1915.

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Vol. 7, No. 5 MAY, 1916

The TELEPHONE REVIEW

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"It's a Pleasure To Deal With That House by Telephone"

"I HAVE never met that young man face to face," said a business man recently, as he hung up his receiver after a telephone conversation; "but the way he talks over the telephone is typical of the whole organization of that house. They always answer every question in a polite and courteous manner. They never keep you waiting unnecessarily. They all seem to take a personal interest in what you have to say, and you can be sure that your telephone requests will have the most careful attention."

Isn't such an endorsement of your house by those who deal with you by telephone a valuable business asset?

It is well worth while to make sure every employee in your organization appreciates the value of telephone etiquette to himself and to *your* house.

AMERICAN TELEPHONE & TELEGRAPH CO. LONG DISTANCE TELEPHONE BELL SYSTEM AND ASSOCIATED COMPANIES

NEW YORK TELEPHONE COMPANY

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The TELEPHONE REVIEW

New York May 1916

VOLUME 7 NUMBER 5

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

Published monthly by the New York Telephone Company. U. N. BETHELL, President; WALTER BROWN, Secretary and Treasurer. Publication Office and Principal Place of Business, 15 Dey Street, New York.

Subscription: $1.50 the year, except to employees of the New York Telephone Co., to whom copies are furnished free of charge.

Remittance should be made by check, draft or money order, payable to the New York Telephone Company.

VOL. VII. MAY, 1916 No. 5

Purchase of A. T. & T. Stock by Employees

COMPLETE figures are not yet obtainable as to the result of the extension of the plan for employees in the Bell System to become stockholders of the A. T. & T. Co., which was effective March 1, and closed March 31.

As for the subscription itself, so far as the employees of the New York Telephone Company and its affiliated Companies are concerned, it was another striking example of their loyalty and interest. A total of 5,211 of them subscribed for 10,548 shares, averaging 2.024 shares per employee subscribing. The total cost of shares subscribed, at the rate of $118 per share, is $1,244,664.

A year ago 50 per cent. of the employees who were eligible became subscribers, and these equaled 33 per cent. of the total number of employees of the Company. Some of these employees have become eligible to subscribe for additional shares under the extension, and still others who were not then eligible have become so. The fact that of the 33,000 additional shares offered to employees of the entire Bell System, 10,548 have been subscribed for among ourselves, speaks for itself.

An employee who subscribed for four shares last year at $110, recently said that his wife strenuously objected on the ground that they could not do without the $8 a month which would be deducted from his salary. By the practice of a little more frugality and economy, however, the payments have been kept up, with the result that on February 29, 1916, he had paid in $96, received $32 in dividends had interest deducted, $15.28, and a balance to his credit of $112.72. His wife is now as enthusiastic over it as he is, and says it is the first money they have ever saved; and he added that he goes about his work now with an interest and with an eye to saving the Company money, greater than he had ever felt before in the years that he has been with the Company.

This investment in four shares of the Company's stock calling for a total outlay of $353.16 will return in dividends $32 per year so long as the Company continues to pay its present rate of dividend, and these dividends at compound interest will equal the principal in less than ten years. This is only one way of showing the advantages of the stock subscription plan, and the benefits under the extension of the plan are proportionate.

Training Camps

IN answer to inquiries which have been made regarding the attendance of employees of the New York Telephone Company at military and naval training camps, attention is directed to the official instructions on this subject, which were issued on March 29, 1916. These instructions read as follows:

The Company hereby adopts a policy of encouraging, but in no way coercing, employees to acquire military training in the National Guard, Naval Militia, or Federal Training Camps, substantially as follows:

1. *National Guard and Naval Militia:*

Employees who are members of either of the above organizations will be permitted and encouraged to perform all duties required under *general orders* of their respective organizations as to instruction camps, training cruises, rifle practice, and similar services. Employees will receive full pay while absent on such service, and such absence shall not operate to curtail any vacations to which they may be regularly entitled under the general rules of the Company.

2. *Training Camps:*

Employees of the Company who desire to attend a Federal Military Training Camp will be excused for such purpose, so far as possible without detriment to the Company's service and the full performance of its duty to the public, and when so excused will receive full pay during the period of necessary absence on such duty. Attendance at a training camp will be considered to include vacations to which employees may be entitled under the general rules of the Company.

3. *Employees not to enroll for both services:*

An employee cannot be excused for National Guard or Naval Militia duty, and in addition for Federal Military Training Camp duty.

Employees desiring to attend encampments of the Federal Military Training Camps, will ascertain from their superiors if their services can be spared and the time most convenient for their absence.

Enrollment blanks for the Military Training Camp at Plattsburgh may be obtained by applying to Officer-in-Charge, Military Training Camp, Governor's Island, New York.

The Essence of the Marvel

SCARCELY anyone stops to think how remarkable is the electric light, an automobile, or an aeroplane; interest is now centered in what they will do. As for themselves, the public has lost all interest except for the use that can be made of them. The achievement of their production is regarded as an accomplished fact, and wonderment over it has ceased. What stands out is the question of their utility, and every new or wider use that can be made of them is hailed with approval.

There is a thought in this for us regarding the telephone.

The wonders of the telephone itself have multiplied so rapidly during the brief forty years of its existence, and are so fresh upon us, after the recent achievements of transcontinental and wireless telephony, that our minds are obsessed by the thing itself, rather than by what it will do. When we so often say that we can talk across the continent and to Paris and Honolulu, we have in mind the amazing triumphs of science which have been wrought by the brain and skill of the greatest body of experts in the world, and we forget what it means.

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What the telephone does was expressed by Dom Pedro, the Emperor of Brazil, when he saw the first crude instrument exhibited by Professor Bell at the Centennial Exposition in Philadelphia in 1876. Dom Pedro said, "My God, it *talks!*" He did not say, "What a wonderful piece of mechanism has been created out of the imagination and by the handiwork of a dreamer and a mechanic!" He saw all that, but what it would do was what startled him; and everything that has been done since then has been to make it talk better and, in the words of Mr. Vail, "to extend the talking distance." So stupendous have been the results of what Mr. Carty and his staff have accomplished, that all the world is amazed as greatly as Dom Pedro was that the first telephone "talked."

But what good is it that the telephone "talks," and that the talking distance has been extended across the continent and practically around the world?

Without abating one iota our joy and enthusiasm over what the telephone is and is to be, let us think also, and more than we have done, of what it will do, and when the public begins to think as much of what they can do with the telephone as they are thinking of what they can do with electricity and automobiles and such things, the telephone will really come into its own.

About Thinking

HAVE you decided, since last month, how to qualify with regard to being thoughtful or thoughtless?

Suppose we become impersonal toward ourselves—like the Irish drill sergeant who told his awkward squad, "Step out here and look at yourselves!"

Suppose we were someone else—what would we think about ourselves?

Often we have very definite ideas of what we think about others.

An anecdote is told of Mr. Choate when he was Ambassador to Great Britain. The conversation at a dinner party turned to the subject of reincarnation, and Mr. Choate was asked what avatar he would prefer to become again, to which he gallantly replied, "Mrs. Choate's second husband!" (With British obtuseness, it is said, a peeress inquired, "Who is Mrs. Choate's present husband?")

It is to be hoped that every husband can pay such a tribute to his wife, but possibly the wife's choice might be different!

Would we care to be ourselves again?

"It is for want of thinking that most men are undone."

(*To be continued.*)

The Maryland Rate Decision

THE general principles governing the operations of telephone companies under Government regulation are settled in the State of Maryland. This result was brought about by exhaustive investigations by the Maryland Commission on its own motion covering a period of several years.

The points decided will be found in the department of The Trend of Regulation in this issue.

This decision should afford the greatest satisfaction to the Commission and to the public in the State of Maryland, as well as to the officials of the telephone companies and the investors therein, who will have definite landmarks by which they can tell what they have a right to expect.

Pavlowa Hears Applause from New York to Utah

MISS ANNA PAVLOWA was obliged to be absent from her début in New York as a moving picture star. Her engagement with the Russian Ballet in Salt Lake City made it impossible for her to see herself make her bow on the movie stage, but she did not miss hearing the reception which New York accorded her.

While the first performance of "The Dumb Girl of Portici," the motion picture drama in which Miss Pavlowa is starred, was going on in the Globe Theater in New York City, Miss Pavlowa herself in Salt Lake City, called her manager at the Globe on the telephone to inquire, "How is it going?"

"Wonderfully," was the reply. "Can't you hear the applause?"

And across the thousands of miles which separated her from her first movie "audience," she heard the clear witness of their approval and enthusiasm.

Practice What We Preach

THE local offices quite frequently receive requests from employees who are subscribers to telephone service for specialities, such as a call number containing one or two digits, special combinations of numbers, long desk stand cords, cut-out button on desk sets, hurried connections, and other special arrangements, and at times some of these accounts require collection treatment before payment is remitted. We who are within the fold whence instructions are issued pertaining to such matters, should be the last to request deviation from the established practice. In other words, we should teach by our example and practice what we preach.

E. J. HIGGINS,
Local Commercial Manager, Paterson.

Main Society

THE enthusiasm over the dinner and the transcontinental telephone demonstration on May 19 leaves no doubt that the Telephone Society of New York is a real and vital organization in the opinion of its members.

The committee in charge of the sale of tickets reports that everywhere among the rank and file of the membership they find the same strong interest in the Society, and the gathering together of three thousand men fired with such a spirit will be in itself a demonstration of what the Bell System is, as thrilling as the wonders of telephony that they will witness and toward which each one, through his work, however great or humble, has been a contributor.

From A to Z one and all are planning to be there, and the sale of tickets thus far indicates that no member will be absent who can possibly attend.

Applications for membership are pouring in, not only on account of the event, but as many of them say, because they want to belong to the organization even though they are too late to participate in this, the greatest night in the Society's history.

In this affair on May 19 about a thousand members of the Philadelphia Society, about eight hundred of the Baltimore Society, and several hundred of the San Francisco Society, will participate with the three thousand members of the New York Society, and the fellowship of the Bell System will find expression across the continent as freely as though no intervening miles separated the gatherings.

It is important that all diners be present at the 71st Regiment Armory by or before 6.30 o'clock, so that the seating may be accomplished without delay or confusion; everything will be run off on schedule, and delay in starting may interfere with the program.

There are two entrances to the Armory, Thirty-third street and Park avenue and Thirty-fourth street and Park avenue.

Business dress will be worn, and as there are often warm evenings in May, every man is expected to make himself as comfortable as possible.

The menu provides a full fish course as well as a roast, so that either or both may be enjoyed to repletion.

The annual business meeting will be brief, during which the officers and executive committee for next year will be elected.

A New York 'Phone Book

"We have put in a telephone," chirped Vanessa.

"Great convenience," said Maud.

"Yes; and just look at this book. What a variety of numbers they place at your disposal."
—*Louisville Courier-Journal.*

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Business Optimism and Telephone Expansion

By F. H. Bethell, Vice-President New York Telephone Company

From the "Evening Post" (N. Y.), March 31, 1916

THE New York Telephone Company and the other telephone organizations in the Eastern group of the Bell Telephone system express their business optimism in dollars and cents. They are optimistic as to what the year 1916 holds for them and for all others in their operating territory, and accordingly they have appropriated $25,000,000 to take care of an increased demand for telephone service which they expect will come during the next twelve months.

Ever since last August and September there has been a tremendous increase in the use of the telephone in the territory of the Eastern group of Bell companies. The Eastern companies operate in New York State, Pennsylvania, New Jersey, Delaware, Maryland, Virginia, and West Virginia, and the largest is the New York Telephone Company. These companies now serve 2,200,000 telephones, 149,000 of which were added during 1915.

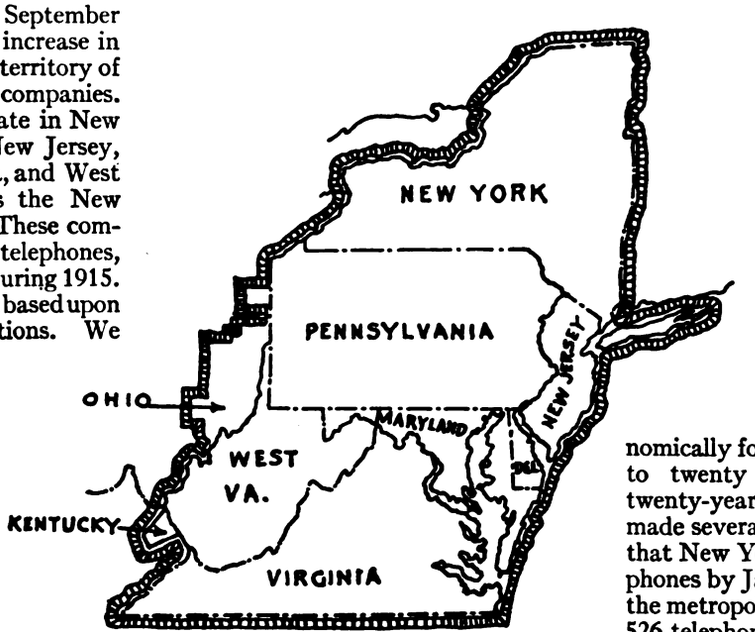
In our opinion this growth is based upon sound, healthy business conditions. We are convinced that the prosperity that caused this development was not of the flash-in-the-pan variety, and we are confident that the next twelve months will see a continuance of this extension along normal, reasonable lines.

So far there has been no sign of a let down in the demand for telephone service, and if conditions should continue throughout the year as at present, we shall be required to install not less than 500,000 additional telephones. Such an increase would mean a net gain for the year of probably 240,000 telephones.

Uninterrupted expansion at this rate, however, is not looked for. On the other hand, we would be surprised if there should be a slump below the average growth in prosperous times in recent years. Our optimism, as expressed by the appropriation of $25,000,000 for enlargement and improvement of our equipment, is based upon the development of last year and the expectancy that throughout this year we will be called upon to do our part to facilitate a greatly increased activity, in commercial, industrial, social, and financial fields.

Extent of System

Few people realize the immensity of the telephone systems operated by the Eastern Bell companies. Their 2,200,000 telephones are connected by 5,825,000 miles of wire. This wire mileage, the exchange buildings, the switchboards, and all the other equipment required for the handling of millions of messages every day represent an investment of about $310,000,000. To maintain, manage, and operate this great system of communication requires an army of 48,000 people, a number equal to nearly one-third of the entire Bell force, exclusive of that branch which manufactures the apparatus.



THE EASTERN GROUP OF BELL COMPANIES

This territory has more Bell telephones than the combined total of telephones in Great Britain, France, Russia, Italy, Belgium, Servia, Portugal, Austria-Hungary and Sweden when the European war began. In this area are 5,825,000 miles of wire, connecting 2,200,000 Bell telephones, cared for by 48,000 employees. Bell investment, $310,000,000.

The New York Telephone Company, which operates principally in this State and northern New Jersey, alone gained more than 91,000 telephones last year. It is now serving the users of approximately 1,246,000 telephones, and the traffic to and from these instruments daily averages nearly 5,000,000 calls.

In New York City the expansion in the demand for telephone service which has occurred throughout the Eastern group of Bell companies was first noticeable early last fall. From that moment to the present there has been a steady rise in the use of the telephone. In the twelve months ending January 1, 1916, nearly 50,000 telephones were added to the system that serves the metropolis. The actual figure is 49,414. By boroughs the increase was as follows: Manhattan, 25,336; Bronx, 6,085; Brooklyn, 15,265; Queens and Staten Island, 2,728. In 1914 the total growth in New York city was 36,597, and in 1913 it was 41,749.

New York to-day has more than 622,000 telephones, a far greater number than any other city in the world. On the first of the year there were 612,526 telephones in the metropolis, a total which is of unusual interest when viewed in the light of our engineering efforts to prepare in advance for the telephone needs of a city. We have found after prolonged investigation and study that fundamental plans for the development of the telephone system of a big city can be made economically for a period of from seventeen to twenty years. In one of these twenty-year studies for New York City, made several years ago, it was estimated that New York would have 604,859 telephones by January 1, 1916. On that date the metropolis, as I said before, had 612,526 telephones. The closeness of prophecy to actuality is an excellent indication of the worth of telephone forecasts. To-day we are planning to provide for the telephone requirements of the metropolis in 1920. In that year we shall be serving 871,000 telephones. In 1930 our forecast prophesies a system of 1,850,000 telephones.

Last year's growth of the Eastern group of Bell companies was largely duplicated throughout the Bell system. Only a comparatively few years ago, in 1877, in fact, the telephones in the entire Bell system numbered only 3,000. On the first of January, 1915, the system contained 8,649,000 telephones, and at the beginning of this year the total was about 9,150,000, which is a 5 per cent. increase in one year. It is entirely within the law of probabilities that during this year there will be a sharp accelera-

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tion in the growth of the system, and that by 1917 the Bell companies will be serving close to 10,000,000 telephones, if not a greater number.

The public, I believe, is generally familiar with the outstanding Bell Telephone achievements last year. With our 3,400-mile long telephone line spanning the continent between New York and San Francisco we made the dream of universal communication in this country practically an actuality. The wireless telephone, as developed by Bell engineers, has carried the voice from Arlington, near Washington, to Honolulu, and to Paris, and has thus lengthened the radius of the human voice to 5,000 miles.

Telephone Cable

One recent improvement which is of unusual interest is in telephone cable. A type of cable has been perfected which carries 2,400 wires in a sheath having a diameter not greater than 2⅝ inches. The importance of this development is shown by the fact that in some of the earlier types of cable not more than 100 wires could be placed in the same space now occupied by 2,400. The value of this cable is very great for use in congested regions underground, in large cities, where it is impossible to place any more ducts. A section of this 2,400-wire cable can be placed in the pocket, but if the wires it contains were strung on poles twelve big pole lines each carrying twenty large crossarms filled with wires would be needed.

There have been many other improvements in telephone apparatus and methods which are too technical for easy description and they all have been designed to make telephone service faster and more accurate. To-day there are 21,000,000 miles of wire in the Bell system. The system is used 27,800,000 times daily or about 9,000,000,000 times yearly. The Bell forces number 170,000. Of these 8,000 are classified as "general." There are nearly 10,000 employees in the commercial department engaged in developing the business, providing for extensions, making contracts and collections and conducting most of the work requiring direct business relations with the public. In the traffic department there are about 82,000 workers nearly all of whom are women operators. The plant department has 50,000 people, most of them men. There are more than 2,100 men engaged in engineering work. And this great army is required to carry on a business that was born only forty years ago.

Early Telephone Struggles in Greenwich

IN the Greenwich *Press* recently, a double column, headed "Chats About Our Town and Its People," by Erwin Edwards, tells something of the struggles which were encountered by those who introduced the telephone into Greenwich.

If you knew what the Telephone Company went through to get a foothold in Greenwich, what straits it was put to to erect its poles and string its wires, and to allay the prejudice against the innovation, you'd wonder why the Company didn't throw up its hands in discouragement and quit at once.

But it didn't. It would have, it is likely, if it hadn't had a man of pluck and persistency equal to the situation, who was sent here to establish a line. And he did. That man was J. M. Butler.

The telephone, it may be observed, was introduced into Greenwich some years before either the electric light or the trolley, and was in truth a pioneer in breaking down the barriers of conservatism which bound fast the Greenwich of early days.

The efforts of Mr. Butler to obtain permission to erect poles in front of people's houses were invariably greeted with "No, sir! We don't want any pole in front of our house, and what's more, don't you try to put one there. We'd cut it down as soon as you did. We don't want any telephone anyway." Sometimes days and weeks and months were required to gain the desired permission, and occasionally when a pole was safely up, it would be laid flat before the day was over.

It would be interesting to hear what those who most bitterly objected to the poles, and "Didn't want a telephone anyway," would say if they were asked to do without their telephones to-day!

We quote again:

Another man who helped in a great measure to build up the telephone service in Greenwich was the late W. T. Bouchelle. . . . He was particularly interested in the young men of Greenwich, and a number of them he put into the service. "Why go outside and get young men when we have just as many, and the equal of strangers?" And that was his way of looking at things.

The first office and the funny little switchboard, the struggle to bring the number of subscribers up to one hundred, tell a story which the Greenwich telephone people of to-day may look back upon with pride. The Greenwich operators, too, have a proud history, from Miss Mary Charles, who was superintendent, operator, bookkeeper, and clerk, right down through the force who stuck to their keys when fire threatened the whole of Greenwich avenue, until the telephone office was no longer habitable, and on down to to-day.

The public was invited to come in and talk to Stamford, for that was as far as they could hold conversation. The farmers came; the merchants came in, and lots of curious people came in, and their astonishment they expressed in their individual ways. . . .

They didn't use copper wire in those days, and when the question was asked: "Won't you be able to talk further than Stamford?" "No," was the reply, "because the wire won't carry any further." But it wasn't many years before Hartford and Greenwich were talking.

And now Greenwich and San Francisco!

Girl Defies Robber

BRIDGEPORT, CONN., Jan. 14.—When she refused to open a safe in the office in the Pequot Poultry Farm in Southport, Wednesday afternoon, for a burglar, and grabbed an unloaded gun, Miss Harriet F. Taylor, nineteen years old, was overpowered, bound to a chair, gagged and carried into an adjoining room. The gag slipped and she screamed, attracting her collie dog, which frightened the man away.

Miss Taylor, with her teeth, pulled a telephone receiver from its hook and telephoned to her home. Her sister Edith got the call, hurried to the office and released her. Sheriff Elwood sent out an alarm for the man.—*Newspaper Item.*

THE public are recognizing the fact that in the rates charged for telephone service in the United States there is no exaction, and are beginning to believe that these charges are the cheapest in the world, and the service the best, and the total cost to the public less than it would be under government ownership.

The amount now paid in dividends and charges on the outstanding capital obligations is no greater than the government would have to pay for the purchase money. In addition to its dividends the Company is paying over $13,000,000 in taxes which would be lost to the community under government ownership.—*From Mr. Vail's Annual Report*, 1915.

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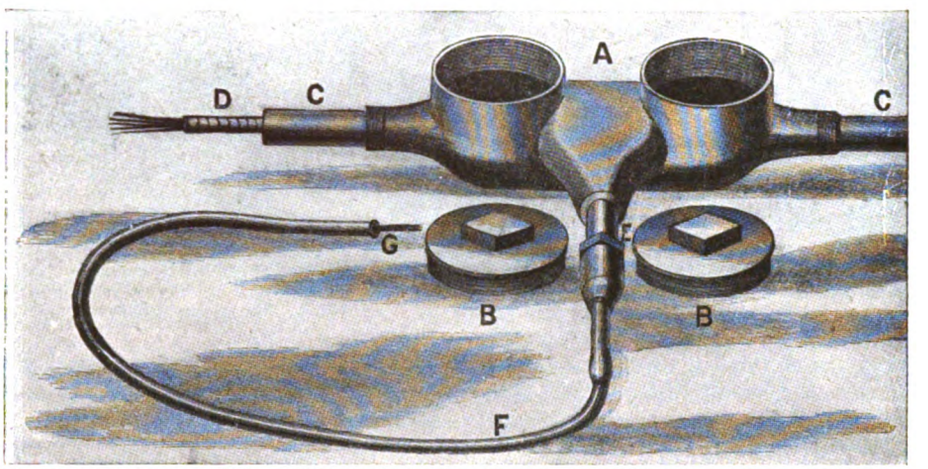
Electrical Subway Problems Raised by Rapid Transit Subway Construction in New York City

Part 1

By Clifford M. Hartley, Assistant Engineer, Empire City Subway Company

IT is a far cry from the present-day conditions and circumstances governing electrical subway construction to those which were encountered in the early days of the art. As in the development of almost any other branch of human endeavor, problems have arisen, have been confronted and conquered. Again, as may be found in the history of the growth and expansion of many another art and science which, in this wonderful age in which we live, has sprung from an humble beginning, and in a comparatively short time has grown to tremendous proportions, the problems that in the early stages of development appeared well-nigh overwhelming seem, in the light of present knowledge, to have been but trifling. Undoubtedly this is true in many cases, and it is just as likely to be true that thirty years from now the solutions of problems which at present perplex us greatly will be, to our successors, as simple as our early problems now appear to us.

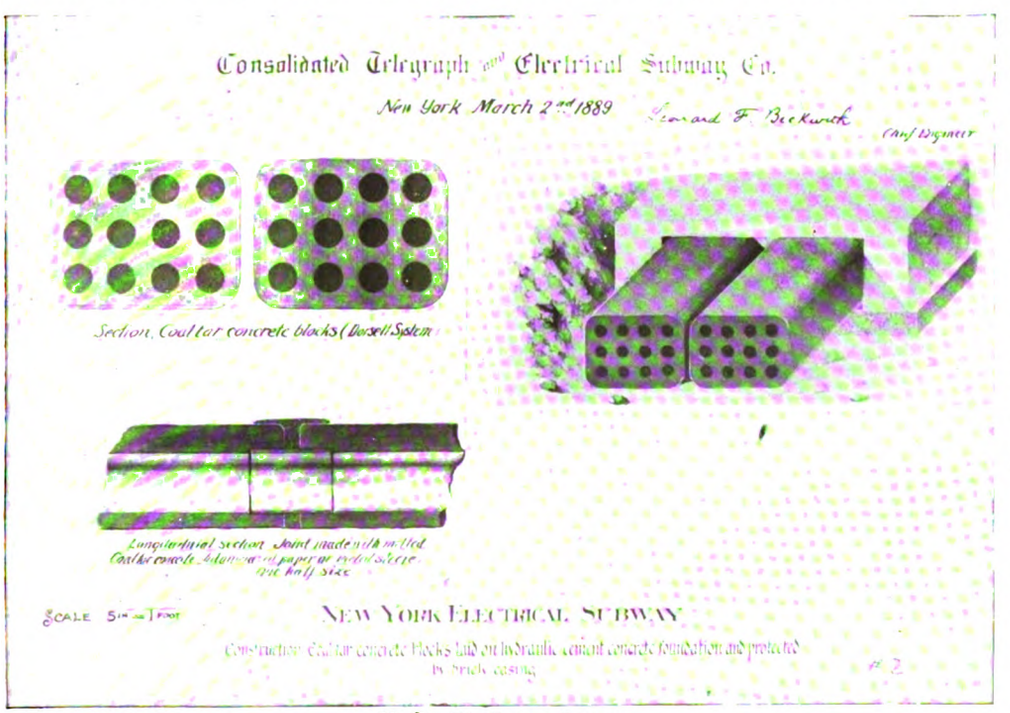
The wonderful and stupendous development of the art of telephony, the tremendous expansion of the telephone business, and, we may say, the absolute dependence of the fabric of our present-day civilization on the telephone, are well known to all—to the telephone man and to the layman alike. They are chanted by the press; they are storied in poetry and in prose, in rhyme and in song; and such marvels as the transcontinental telephone and the operation of the wireless telephone make a tremendous appeal to everyone—to young and to old—to those who see in them the triumphs of years of work by men of courage and science, as well as to those to whom they seem but the realization of the dreams of the writers of imaginative fiction.



The Brooks Underground Telegraph System in London; Showing the Hand-holes and Outlets for Taking Wires into Adjoining Buildings. These Outlets on the Streets Can Be Made As Numerous As Desired.

It is, however, when we are enthroned on the heights that we are most liable to be plunged to the depths, which, in this case, are the depths existing beneath the streets of Manhattan. There are electrical subways to be found in most of the great cities of the world, and not only in the great cities, but in many smaller ones; and there are, too, subways that are not in cities at all, but which serve to connect, in an unbreakable chain, some of our large centers of population. But it can be said without fear of contradiction that in no city in the world are there electrical subways in such great number, and the building of which is carried on under such trying conditions, as in the city of New York.

From a small beginning, in the year 1886, the growth of subway construction, which in the first few years was very heavy, owing to the desire to get as many wires underground in as short a time as possible, has been steady and strong, anticipating the expansion of the telephone lines, not only in the



No. 2. The Dorsett System

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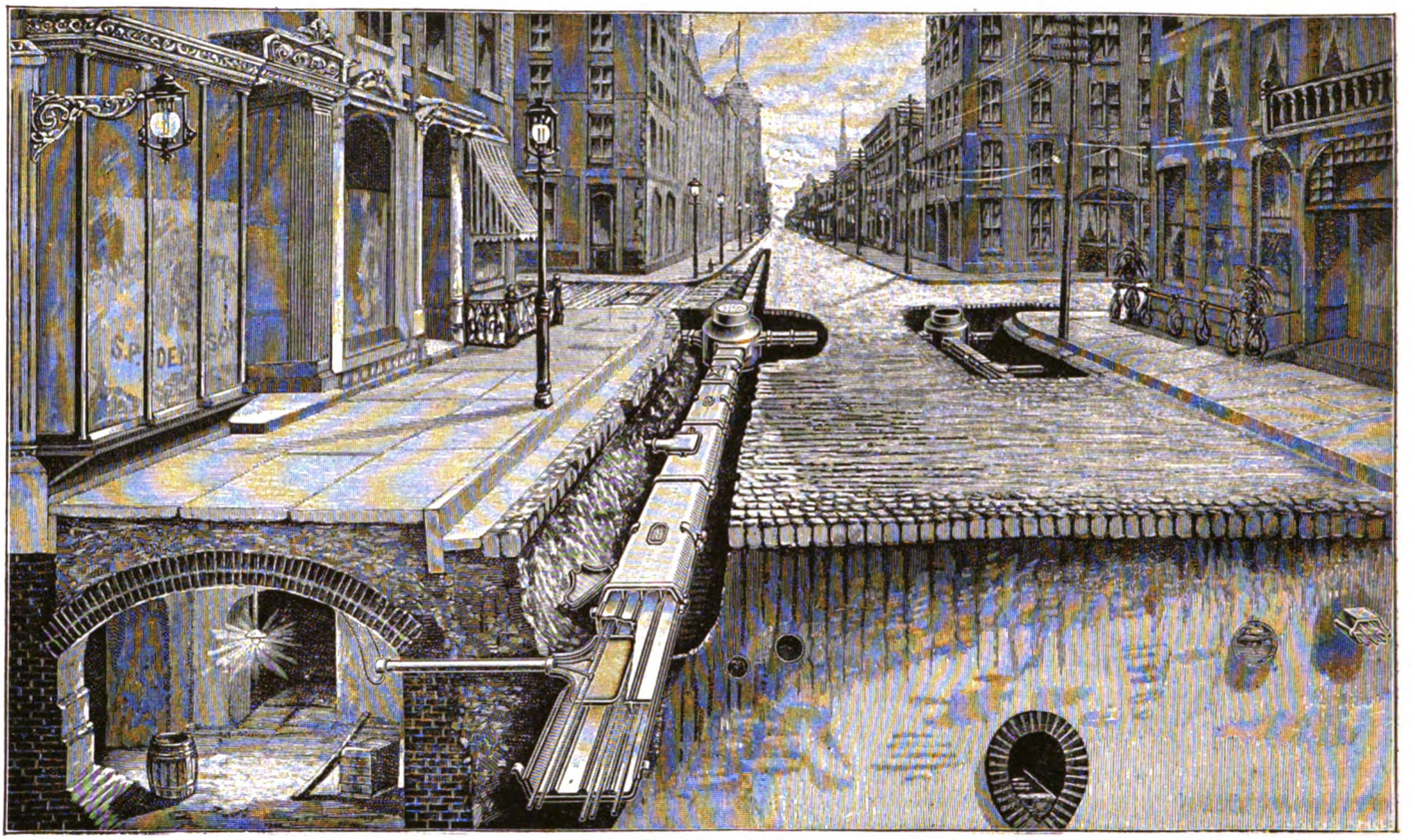

No. 3. The Johnstone System

congested sections of the city, but in the outlying and fast-growing portions of the Bronx.

It might be well, at this point, to give a short résumé of the history of electrical subways, for the benefit of those who are not familiar with the subject.

Although there were already several sections of conduit in the ground, the first comprehensive system of subways, in New York City, came into existence largely through popular clamor against the menace caused by the congestion of highly charged overhead electrical conductors in the downtown sections of the city. A contributing cause was an agitation for a city beautiful, the realization of which, it was recognized, could never be obtained while the streets were disfigured by a maze of wires and poles. There were numbers of fatalities caused by persons coming into contact with live wires, and the agitation finally culminated in the passage, by the Legislature of the State of New York, of the Subway Act of 1885. Under the provisions of this Act, there was created a Board of Commissioners of Electrical Subways, whose duty it was to see that, as far as practicable, all overhead electrical conductors in the city be placed underground. This board, in the course of a year, received from electricians, inventors, engineers, and others, some six hundred schemes for the installation of underground conduits. The Metropolitan Telephone Company and the New York Edison Company, among all the companies operating electrical circuits in the city streets, were the only ones which evinced a willingness to coöperate with the board in its endeavors to enforce the provisions of the aforementioned Act.

Prior to 1878, which is approximately the date of the introduction of the telephone and of the electric light, for commercial uses, the only wires carrying electric current for practical purposes were those used by the telegraph companies, and other companies in the transaction of whose business the telegraph played an important part. The requirements of these industries did not warrant the voluntary placing of their wires underground, except in rare and isolated cases. The use of the telegraph was not universal, and interruption of service due to storms was not a serious factor.

With the advent of the electric light and the telephone, however, this became an important consideration, and very early in their history we find some of these companies inclined toward underground construction, in cases where the density of traffic was such as to warrant the large financial outlay demanded by this method of installation.

Chicago claims the credit of being the pioneer in the movement for the undergrounding of electrical conductors, and probably the first serious attempts in this country to bring about this result on a large scale were made there. However, the earliest record we have of an effort to bury wires reveals the originator of our present method of telegraphy, Professor Morse, attempting this construction between Baltimore and Washington in the year 1844. The failure in this instance was due to defective insulation, and upon investigating the results of various other attempts, it is seen that failures, when recorded, were always due to ignorance of some equally simple, but vital, requirement.

When we delve into the records of the history of conduit construction in other countries, it is surprising to learn that the undergrounding of wires transmitting signals was tried experimentally in England by Sir Francis Reynolds as early as 1816, and that the methods of to-day are merely a refinement and logical development of those used or suggested by him. In a book published in 1823 he describes a short underground line which he laid at Hammersmith, England, in the year just mentioned. This conduit consisted of a glass tube laid in a wooden box filled with pitch, a bare copper wire being drawn into the tube. Sir Francis further suggested that iron be used for conduits, that they be laid below frost line, and that assurance against entire interruption of service be obtained by the construction of duplicate lines.

In 1837 Cooke and Wheatstone took out a patent on a scheme for electric transmission, an essential part of which was a plan for placing wires underground. This device consisted of a wooden block, cut by longitudinal grooves to hold the

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wires, which after insertion were covered with a strip of wood. A section of this line was laid and used between Camden Town and Euston Square Station, and in 1838 these same inventors took out a patent for an iron pipe line into which grouped conductors were to be drawn. This line was constructed along a railroad right-of-way from Paddington to Slough.

In 1849, three-inch vitrified pipes for electric transmission lines were laid across Hyde Park, in conjunction with a fifteen mile section of three-inch cast iron pipe, this construction indicating the confidence of these pioneers in the efficiency of vitrified clay on all counts except mechanical strength. This belief was further displayed by the construction, in 1852, of a tile line between London and Liverpool, a distance of over 200 miles. Sections of split tile were inserted in this line, at regular intervals, to permit the drawing in of sections of cable. Through the action of frost, settlements, and other disturbances the joints, which were merely of clay, opened, admitting roots and other vegetation which broke and obstructed the ducts. Both of these lines were subsequently largely displaced by cast iron pipe.

In 1874, there were over 100 miles of underground conduit in the Metropolitan district of London, containing over 3,000 miles of wire; and by 1886 this had increased to 240 miles of three-inch and four-inch cast iron pipe, and over 12,000 miles of wire, with about 13,000 miles in the rest of England. In 1886, Germany had about 22,000 miles of wire underground, and doubtless many Continental cities had more or less underground construction.

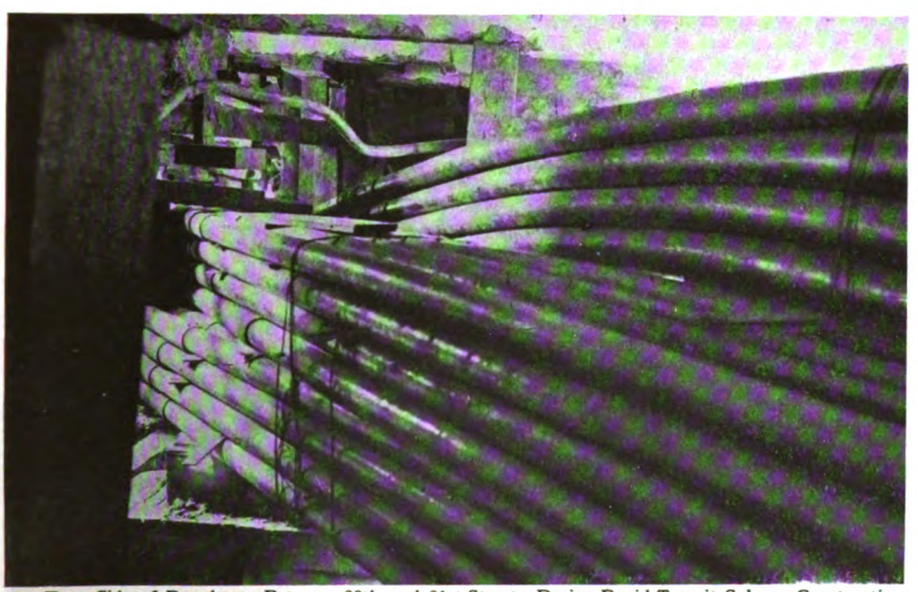
It is difficult to say exactly when underground electrical conduits were first satisfactorily employed. In 1859 we find them loudly condemned, but a proper perspective of the situation indicates that the fault was primarily with the wires or cables. The conditions were about as follows: the work of construction was carried on rapidly, and in ignorance of the care necessary to preserve the wire insulation, which at best was crude and imperfect. Some came from the mill unfitted for its work, and more of it rapidly became so as the result of handling, the gutta percha, which was the general insulating material used, splitting and exposing the conductors. The heat of the sun softened the dielectric, allowing the wires to come in contact with each other. When they were laid in a wooden trough, or where the faulty joints of the conduit permitted the entrance of tree roots and moisture, the gutta percha rapidly disintegrated.

Looking Northwest Just North of Empire City Manhole at N. E. Corner of 20th Street, Showing Two of the Three Banks of 24 Ducts Each, of the 72 Duct Empire City Subway, Curving from Under the Sidewalk into Trench in the Street. The Third Bank, Which Is Not Visible, Is Just to the Left. At a Point North of the Hydrant Connection (Shown Crossing Over Subway in Center of the Picture) the Three Banks Run Side by Side

The failures of the various cables used in the early history of the art—that is, prior to 1890—can all be traced to inferior material, imperfect construction, faulty workmanship in splicing, and a lack of knowledge of the requirements of the service. Cables unprotected by a lead sheath deteriorate rapidly when underground, as gutta percha, India rubber, and asphaltic compounds are affected by moisture, heat, gases, and the various corrosive substances which water, falling through the air, or percolating through the roadway, will take up and carry in solution. All cables for underground use having these materials for dielectrics are short lived, unless protected by a waterproof covering.

As early as 1846, a type of lead sheath for wires was used in London. These "cable" sections were in 150-ft. lengths, and were composed of four copper wires, each wrapped with two layers of cotton, the annular space between being filled with a composition of tar, resin, and grease. Two of these "cables" were joined by splicing the wires and covering the joint with a split piece of lead pipe of larger diameter, which was soldered. In 1886 a part of this line was uncovered, and found to be in excellent condition, the insulation of the wires being good, and the tar compound fresh. Unfortunately, early cable development was not along these lines. No permanently satisfactory cables were produced until lead was adopted as a protective coating, and underground conductors were not recognized as practicable until the cable troubles had been eliminated.

We have mentioned the fact that when it was first desired to build, in the city of New York, a comprehensive system of electrical subways, there were submitted to the Board of Commissioners of



East Side of Broadway, Between 20th and 21st Streets, During Rapid Transit Subway Construction, Looking North from Just North of Manhole at N. E. Corner 20th Street, Showing Empire City Subway of 72 Ducts Fanning Out into Three Banks of 24 Ducts Each

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Electrical Subways some 600 schemes and designs for such conduits. Many of these—in fact, most of them—were highly impracticable, and, although they all received consideration, there were but a few that were actually tried out. Of these few, the first were what were known as the Brooks, Dorsett, and Johnstone systems, named respectively after the men who invented them.

Out of the maze of suggestions, proposals, and plans, presented at this time, there naturally arose much discussion and controversy over the respective merits of various forms of construction, some even claiming that the whole proposition was impracticable. In this connection, one of the commissioners pointed out that in Germany the wires were underground, and that no complaints were heard; to which Dr. Green, then president of the Western Union Telegraph Company, replied that as the wires belonged to the government, the people had to be satisfied with the service, whether good or bad. Which goes to show that Dr. Green was wise beyond his generation!

The principal difficulty confronting these pioneers in this underground work was the question of insulation, as brought out before. The Western Union Company had a few lines of gutta-percha covered wire laid in three-inch W. I. pipes, and they did not figure on the wires lasting more than one year. How different are the troubles of the subway engineer now! Little cares he, or thinks he, of the insulation of the cables to be drawn into the subway, as long as he can find a vacant spot in which to build it!

But more of that later. Before going into the subject of certain aspects of subway construction at the present time, in New York City, it might be well to sketch briefly the lines along which this art has been developed; from the days when each step was taken as by those groping in the dark, to the swift progress now made in the light of knowledge gained by experience and industry. Out of the innumerable number of schemes and designs for electrical subways presented in the first few years, there arises one as a Phenix from its ashes—and that one is just plain wrought iron pipe. This was used in enormous quantities in the early days, due to the fact that the popular demand for rapid construction made it imperative to use some material which was already on the market, and only this could be produced in quantity.

All other materials and methods being but experimental, W. I. pipe embedded in concrete became, perforce, the standard construction, and, in spite of its excessive cost, remained so for many years. Meanwhile, various other forms were being tried, none of which have stood the test of time, in so far as being duplicated to-day is concerned, though some of the early conduits are still in successful operation at the present time.

The Brooks system, shown in Fig. 1, and consisting of W. I. tubes equipped with coupling boxes for service connections, was installed in several parts of the city. Into the tube was drawn an ordinary jute-covered cable, and the tube was then filled with a resin oil, kept under pressure by means of small standpipes, or by reservoirs on the roofs of adjacent buildings. This system, with its obvious disadvantages, was soon abandoned.

Another, the Dorsett system (Fig. 2) was a conduit of multi-tubular blocks made of a bituminous concrete, and joined together with compressed paper ferrules inserted in the ends of the blocks, the whole then being surrounded with a brick and concrete encasement. This system developed many defects, chief among which were trouble at the joints, and a tendency of the ducts to soften under the influence of heat. In Chicago they also built the manholes of this bituminous concrete.

European practice embraced a quite extensive use of cast iron for electrical conduits. In this country, the chief exponent of this material was the Johnstone system of subways. This was exclusively of cast iron. The conduit proper was made up of plates of various sizes, which could be assembled in such manner as to give any even number of ducts from four to sixteen. The top sections were supplied with removable caps which permitted the substitution of an ell for the purpose of making service connections. The manholes were constructed of cast iron rings set upon a pan, and supporting a casting very similar to the ones now in use. This system is illustrated in Fig. 3.

Cement-lined pipe, fiber conduit, and creosoted wood ducts have all been extensively used, in the past, and the two latter are still employed under certain conditions. This cement-lined pipe was a proprietary article composed of thin strips of sheet iron riveted together in a cylindrical form, and lined inside with about one-half inch of cement. The fiber conduit, at first manufactured of an indurated compound, was a dismal failure. However, it is now being made in a different way, of wood fiber, and is, we believe, meeting with more favor in some sections of the country—principally in the Southwest.

Creosoted wood duct, or "pump-log," as it was originally called, makes an excellent form of construction under certain conditions. Its powers of resistance to shock and corrosive influences make it particularly desirable in damp soils and rock excavation, while its lightness and cheapness are also points demanding favorable consideration.

Finally, there is the material which at the present time in New York City, as well as in other parts of the country, is most generally used for electrical subway work—namely, vitrified clay. We have heard it said of New York (whether justly or not we do not know) that in the recognition and adoption of many municipal improvements it is generally years behind other cities. It is quite certain, however, that vitrified conduit had met with a general and successful use for some time before it was introduced here. New York clung tenaciously and conservatively to its wrought iron pipe, but the bonds were finally broken, and clay conduit came into its own. It is now virtually the standard material of construction.

Showing the Style of Clay Ducts In Use at the Present Time. East Side of Lexington Avenue, from 119th to 120th Streets. Looking North from Middle of the Block. Empire City Subway in Course of Construction, Curving Under the Sidewalk.

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Long Span Crossing Kensico Reservoir

By Edward Kent, Division Supervisor of Construction, Westchester

THE present water supply of New York City is barely sufficient to meet the demands upon it, and the new Catskill Mountain system, which is nearly completed, is urgently needed.

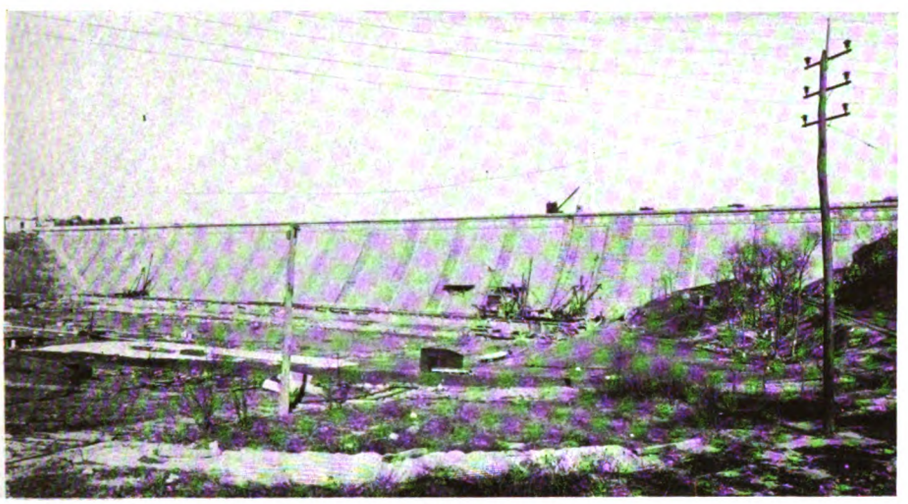
Looking Across the Span. When the Basin Is Full, Water Will Reach to Within a Few Feet of the Poles on Both Sides

This system will supply water from the great Ashokan reservoir, twelve miles west of Kingston, N. Y. This reservoir will impound the water from its tributary watershed, the Esopus, 250 square miles in extent.

There are other available watersheds which will add approximately 400 square miles to the system.

The Ashokan reservoir was formed by building the Olive Bridge Dam and several dikes, and is thirteen miles long and about one mile wide with a maximum depth of 190 feet. Once full, it will, without any source of supply, hold enough water to meet for six months New York's need of approximately 500,000,000 gallons per day.

From Ashokan the water is conveyed through the Catskill Aqueduct to the storage reservoir at Kensico, and from there to the distributing reservoir at Hillview, near Yonkers, N. Y. The total distance is about ninety miles.



The Face of the Kensico Dam

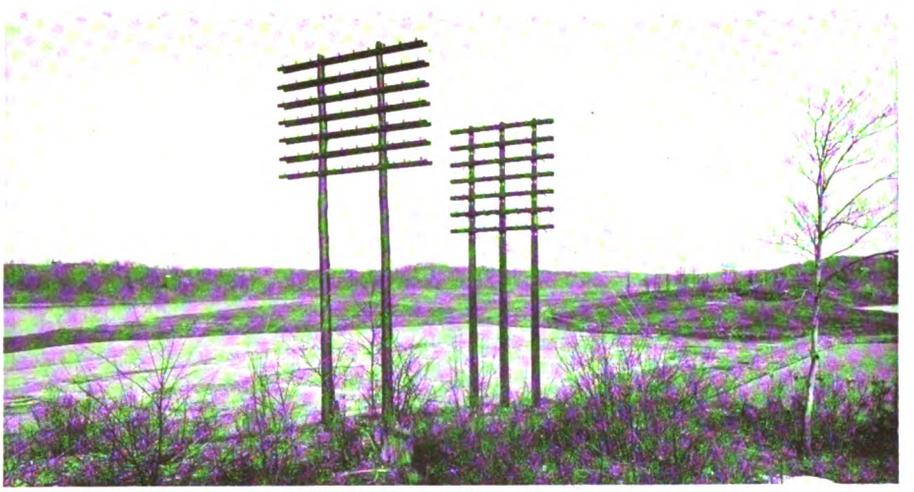
In crossing under the Hudson River it was necessary to cut through solid rock 1,100 feet below the surface. The total cost of construction was estimated at $160,000,000, but it will probably cost nearer $200,000,000.

Of course, the construction of the water system meant work for the New York Telephone Company. This work was described in THE TELEPHONE REVIEW for December, 1911, and January, 1914. Many poles were in the way and had to be moved.

About five years ago, when the work of closing roads and demolishing houses began at Kensico, the New York-Boston Central Line of seventy-one wires was located on one of the roads about to be closed. It was rebuilt on the side hills for over two miles, but owing to the general direction of the line it was necessary to cross the basin at some point. At the time it could not be decided how the permanent crossing would be made and poles were set through the basin.

In the late summer of 1915 we were advised the water would be turned on in November. This was over a year earlier than it was supposed the great dam which forms the southerly wall of the reservoir could be completed.

Two plans were under consideration. One was to lay a submarine cable and the other to place steel towers. The first was given up as it was thought the maintenance of protection would be difficult. As a substitute for the second plan, it was decided to erect two fixtures,



New Work Completed; Old Line Removed; Water Covering Location of Old Line

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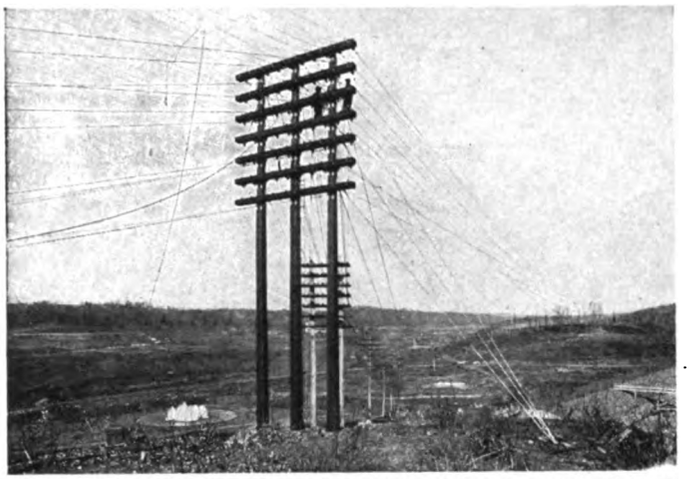


The New Fixtures in Place, Showing the Top Ten Wires Across; the Three No. 11 Steel Stranded; the Old Line Through the Basin; Aerator to the Left; Water Just Showing in Faint Stream

each to be made up of three 60 foot square creosoted yellow pine poles. These poles have 8-inch tops and 17-inch butts. On the fixtures are placed special creosoted crossarms measuring 19 feet 6 inches by 6 inches by 4 inches. Standard "H" fixtures are placed 50 feet back of the three-pole fixtures.

The place selected on which to erect the fixtures was found to be ledge rock covered with from 6 inches to 2 feet of earth, and it was necessary to drill for all poles and guys.

Nine hundred and ninety-eight feet of 1-inch holes were drilled and blown before we were able to clear holes for poles, and trenches for the guys. As some of the trenches were 20 feet long an observer might have reasonably supposed we were preparing for an invasion by an enemy.

To hold the fixtures securely against strain, 16 line guys and 6 side guys were placed on each three-pole fixture, and 4 line and 2 side guys, on each "H" fixture. After the fixtures were placed in position, three No. 11 steel strands were run across the gap, holding the three-pole fixures together. This gave us a better opportunity to secure an even tension on the guys were in place. It then became a race against time.

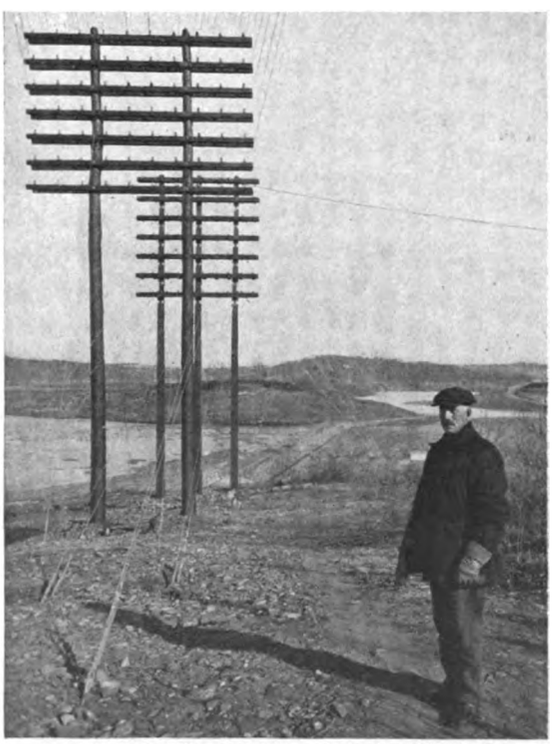
Day by day, hour by hour, the water could be seen creeping closer and closer to the old line in the basin. At night a rock, or mound of earth, would be seen clear of the water. In the morning it would be covered by the slowly creeping, never stopping flow.

The harder we worked the faster the water seemed to rise, until finally it got so high we prepared to remove some of the poles in the bottom of the basin, and let the wires swing in long sections.

Fortunately this was not necessary, as the poles arrived and we were able to complete the cut over just two days ahead of the time the water reached the location of the old line—which you can rest assured was not allowed to stand very long after the new line was working.

THE GANG THAT PUT THROUGH THE JOB

Top Row: Wm. Stevenson; H. Powell; L. Portong; H. Lowe; M. Collins; J. Goodwin; J. McGuinn; Chauffeur Kennedy. Front Row: Seated—H. Hess; L. Martin; J. Trannig; A. Lang. Standing—O. A. Olsen, Engineer; W. A. Sherwood, Supervisor; Sam. Candee, Foreman.

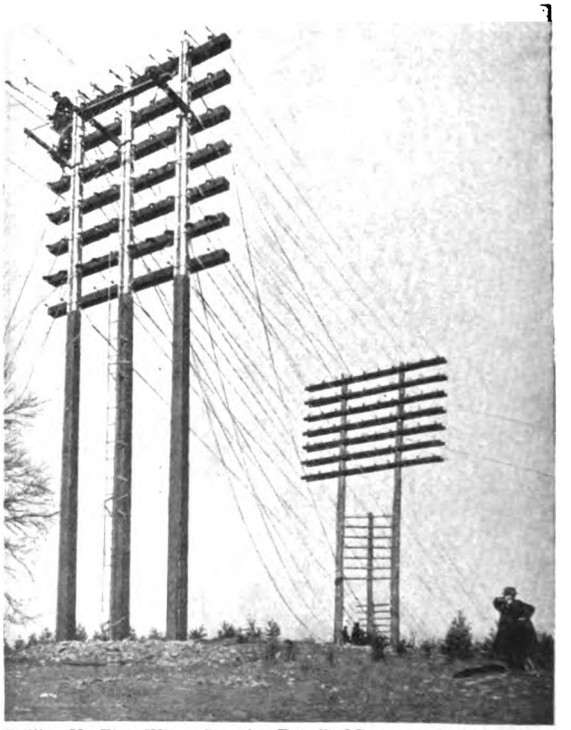


"Sam." Candee, Foreman of the Gang that Did the Job

than we would otherwise have had. Later these strands were used as messengers on which the No. 8 steel conductors were pulled across the gaps.

The wires were run across ten at a time, and pulled up until the sag measured 15 feet in the center of the span, which is 907 feet long. The sag is uniform; a transit having been used to sight across the center of the span.

Owing to freight congestion there was considerable delay in the arrival of the pine poles, which were on their way from the South; and the water was turned into the basin before our fixtures



Fulling Up First Wires; Showing Detail of Construction of Fixture

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Behind a Telephone Call

By Dorothy Thorne

"ALICE! News!" Except for their ring of exuberant gladness, the words might have been uttered by the storm itself as James Talbot was literally hurled into the room on the crest of a terrific blast of wind and shrieking rain. But the wild turmoil outside was as nothing to the good omen of expectant, suppressed delight that was added to the habitual, bluff good cheer of the newcomer.

Alice Marsh greeted the rugged young farmer with a smile, hardly looking up from the tiny switchboard in one corner of the big main room of the farmhouse. Over this little nerve centre of the country district where she lived, Alice presided as agency-operator of East Southport. Her sister Nell was the rest of "the force," but Alice was "chief operator"—and a strict one. Talbot was going to take her away from the little switchboard as soon as he could buy a farm of his own, but as if in penance for this hostile design of his against the little board, he was always made to recognize that for the present it was much more important than he.

"Some of the wires must be down, I can't get Ralston's, Mrs. Merrick," Alice was saying as Talbot waited beside the board, a long envelope in his hand.

Then she was free. There were never many calls at a stretch on the East Southport board.

"Well, what is the news, Jim? It looks good." But another call interrupted her, and some of the lines were misbehaving. "I'll have to wait," she said. "You go get dried out by the fire. Something's wrong with the wires."

Talbot rather disconsolately joined the family group by the fire.

"Didn't know as you'd get over to-day. Worst storm we've had in twenty year, I guess," was Mr. Marsh's greeting.

"How'd y' come, Jim? Thought the bridge over your creek went down," Alice's young brother was eyeing the drenched form as though he thought possibly Talbot swam at least half the way.

"So?" was the reply, "I don't know, I came round by the Upper Road."

"Any sign of the button factory up at Tuttle's?" Mrs. Marsh inquired, for Talbot must have passed there if he came by the Upper Road.

The question was like a match to last year's hay. Indignation against the threatened button factory at Tuttle's burned hotter than the big log fire on the hearth. Talbot had come back only yesterday after a week's trip—looking for good farm land, it was whispered—and it was all news to him. But he was enlightened quickly enough. The big mortgage on the Tuttle place would fall due soon—no one knew just when—and it had just leaked out that Jerry Morton who held the mortgage would foreclose by hook or crook if he could. He had been offered a staggering price for the property if he could get hold of it, by a button factory whose promoters had looked enviously at the fifty-foot downward leap which the river took on its way by Tuttle's pasture. The concern had tried in vain to gain a foothold there, or near the rapids farther down, but every landholder had loved the fertile valley with its gently sloping hillsides and not an inch of land had been for sale to the factories. It was the garden spot of the county, and it had been cherished with a kind of traditional loyalty to the place where the ancestors of East Southport had first settled.

"It's a mortal shame if Morton gets Tuttle's place after all the workin' and plannin' Mrs. Tuttle and the girls have put into it." Mrs. Marsh was indignant.

"If the button factory goes up on Tuttle's place, Miss Raymond might as well close 'The Pines.'. Nobody's coming to a summer boarding place with a factory across the road shutting off the view and spoiling the river, even if they have been there every summer for twelve years." Nell was incensed, because the summer boarders—substantial, fine people for the most part—were her plate glass window to the outside world.

The ruin of "The Pines" would be a misfortune to more of East Southport than Nell. Everyone benefited from the prosperity of "The Pines," from the "general store" and the farmers whose produce appeared on Miss Raymond's abundant table, to the small boys who acted as guides to blueberry patches and mountain tops.

"I should think Miss Raymond might get Fletcher's and move down there." Mrs. Marsh saw a ray of hope. "He'd sell to her all right, he comes home so little now. Couldn't be a lovelier spot or a better piece of property either."

"Fletcher's will be spoiled by the factory just as much as 'The Pines'—and Scott's will too," said Mr. Marsh with a grim finality. "The whole of the Upper Road will have to go to factories if they once get in there, and they know it."

"But do you think there's any real danger that Morton will get it? Mrs. Tuttle could raise the money right here in town easily, I should think, to protect the valley," Talbot suggested.

"Of course she could, but whose business is it? Mrs. Tuttle won't have anything to say on the subject no matter what happens, and I don't know who'd risk suggesting it to her. She's a fine woman, but she doesn't want any help managing her affairs," commented Mrs. Marsh with some asperity.

All through the hot discussion the storm continued its accompaniment of violence. It might have been a powerful bulldog shaking the very life out of the detested button factory.

Talbot had grown silent. He listened to the storm and finally strode back to stand beside the switchboard. Alice had been unusually busy; the storm had sent the whole countryside to its telephones, and many wires were "out."

Suddenly the whole board seemed to go dead. For a few minutes Alice tested one line after another in quick succession, finding only an occasional one still working. The trunk lines too seemed to have gone out in a flash. To Darr, the nearest "town," to Lawton's Landing down the river, to Fort Hill twenty miles across the low mountains—she tested them quickly, firmly, and as she worked her lips tightened and her face grew tense and pale.

"My Heavens!" she breathed at last, "there isn't a trunk line left, to Darr, or anywhere. Not one. We can't get a word in or out of this town . . . Yes . . . Fort Hill . . . One line left out of town. But not a line to Darr! Darr *gone*."

And then as if her words had summoned it, a call came.

"Four three eight six, Darr."

"Twenty minutes past two, girls. Morton ought to be disposed of by this time." Mrs. Tuttle stood at the window nervously tapping the pane as she gazed at the storm-swept hillsides. What she saw, however, was sun-bathed slopes of rich farmland stretching clear away to join Fletcher's golden acres down the road, and heavily fruited peach trees, and the trim white house. All were calm, sure, peaceful in the bright sunshine, released at last from the grim shadow they had struggled under for so many years. Morton's subtle plots were ended and the place was free. It had been arranged for Cousin Henry to meet Morton at the First National Bank of Darr at two o'clock this afternoon and pay over the money that would foil the schemer's game at last. As the fateful hour had struck, Caroline and her sister had attempted some mild merry-making, but somehow it had been tacitly aban-

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doned. The ghost of many anxious years of struggle would not be laid by the mere passing of an hour.

A tree across the road crashed down under the onslaught of a wild gust of wind. Mrs. Tuttle did not return at once to her reverie but watched the storm for a while.

"Girls, there's some mail in our box!" she exclaimed as she noticed the little tin flag standing upright on the "R. F. D." box. It had never been visible from this window, until the tree fell.

Anything was welcome to distract them from the tension of the hour, so Caroline laughed away her mother's protest and went out into the storm. She ran down the driveway and back with a boisterous escort of wind and rain, but returned safe and triumphant with a letter for her mother.

It was typewritten, on the stationery of the First National Bank of Darr, of which Morton was a director, and was postmarked Darr at 5.30 the night before. The date inside, however, was two days earlier. The signature was Morton's and from long experience, Mrs. Tuttle's hands trembled as she read it. It was simply the curt statement that "as agreed" he would be at the Third National Bank in Darr until three to-day, to receive the money. At first they wondered what the formal rehearsal of their agreement meant. Then with horror the thing dawned upon them.

Morton had played the last card in his tricky game, and it was the ace of trumps.

Business between them had always been done at and through the First National Bank. The Third National was quite new and its clientele was made up from the large foreign population which had grown up in Darr with the manufacturing industries. The chances were that the slight difference in the name of the bank, considering the utter improbability of the newer bank's being even thought of, would be unnoticed. The letter appeared to be but a perfunctory confirmation in writing of a previous conversation. Craftily too, he had arranged that the letter be mailed as if by accident, two days after it was written.

"But it's only a trick, Mother, a technicality. It can't hold in the end, he can't get our place from us that way."

"Yes, he can. He will. It's the irregularity he was wanting, and since we didn't supply it, he did. He can easily get a lawyer clever enough to have it sustained. Morton's too clever and unscrupulous for us to win against. I guess—" Mrs. Tuttle's voice trailed off. "The factory has got our place" was in her mind, but she could not say it.

"Clever! He's a simpleton." Caroline jumped to her feet. "Doesn't he suppose we can telephone Cousin Henry?"

It was the flash of lightning that clears the atmosphere. Caroline seized the telephone directory and Mrs. Tuttle stood by the telephone. "He hasn't been out this way for two weeks, not since the telephone line was run up this road, anyway. He thought we'd be helpless, it's so late," said the younger daughter.

"The First National is Darr 4386," called Caroline.

Her sister rattled on excitedly. "The Third is just across the street from the First and it's only twenty minutes to three. Old Morton will be surprised to see Cousin Henry come walking in there, won't he! And see his little plan fall through!"

The girls danced jubilantly from one side of their mother to the other, till they saw her face turn ashen.

"Can't you get Darr 4386?" she was saying.

Then after a long pause, again, mechanically, "Can't you get Darr 4386?"

"Mother, tell the operator what it is for. If she knows how important it is—to this whole town, Mother, not just us—she'll get it somehow. Do tell her," pleaded Caroline.

"Caroline, it isn't necessary to publish your private affairs to get *anyone* to do her duty." And Caroline, knowing her mother, was silent.

In another minute Mrs. Tuttle hung up the receiver, heavily, as if it were the weight of burdens she could no longer support. "She says all the wires to Darr are down."

The rain and wind shrieked around the house making it shudder, and rattled against the window as if to hasten the destruction that was approaching it.

"Darr 4386?" Talbot watched Alice as she began to test the Darr trunks again.

"You've tested every one of them, and they're all out, Alice," he said. "Tell them you can't get Darr. It's time for Nell to take the board. Come on."

Alice shook her head and worked. "I'm trying to get Darr 4386," she said to the subscriber as she tested in vain for a line.

"Who is it, anyway? I don't believe they're in a hurry." Talbot was impatient. Nell who was watching too, answered for her sister.

"That doesn't make any difference, if there's any way to get the call through, but there isn't." Then remembering the question, "I don't know who this is. There are a lot of new ones since those lines were run over to the Centre, and on the Upper Road, and we haven't learned which is which yet."

"All the lines to Darr are down, but I'll try and get the call through another town," Alice was saying to the subscriber.

"There, they rang off in the middle of your sentence. I guess they weren't in a hurry. Come on."

Alice looked up. It seemed hopeless, and unnecessary too—and impossible. The only working line out of town was to Fort Hill, twenty miles in the opposite direction from Darr. The lines to Darr were down, and for every other route to Darr the lines were dead. Why waste time chasing wild geese? But she knew she wouldn't give up while there was one working trunk, no matter where it went.

"Hello, hello, Fort Hill," she said. "Can you give me a trunk to Darr?"

"Darr?" answered the astonished operator at Fort Hill. "We have no trunks to Darr. I will give you Redlands."

Redlands usually had trunks to Darr, but the storm had taken them all. "Is there any way I can reach Darr?" Alice pursued. And Redlands gave her Fullers Crossing. Thus the circuit was built up till Alice, tense with determination, heard the operator at Darr.

Then she rang back the calling party. "Did you call Darr 4386?" she said. "Here is your party."

Twenty minutes later Alice exclaimed, "Here's a call from Darr for the same party that called Darr before. If it wasn't important, Jim, it brought in another toll call anyway!"

Then the subscriber was talking with Alice and they heard her say, "I'm very glad. Everyone will be glad." And at last she let Nell take the board.

"That was Caroline Tuttle," cried Alice as she fairly flew over to the group by the fireplace. "And that call to Darr kept the button factory out of East Southport! She called me to thank me for getting it through. Her cousin just called her to say old Morton is all settled."

The general rejoicing by the fireplace was as hearty as had been the denunciation.

But it was simply duty done, to Alice, and she turned at once to join Talbot by the window. The storm was over, and the afternoon sun was flooding the hills.

"Jim," she said, "with all this excitement you haven't told me your news yet. What was it?"

Talbot seemed to have forgotten it. "Look," he said, pointing to the sunbathed hills in the distance. "You can see part of the Upper Road that you saved, from here. Did you ever notice? There's Tuttle's windmill, and Fletcher's south meadow—part of Fletcher's house, too, you can see it just above that maple." It was a sight of rare beauty, flooded in the soft golden light which the last hurrying clouds made brighter and more tender by comparison. But Alice only repeated, "What was the news, Jim?"

Talbot gave her the envelope, and at last his gaze was relinquished from the sunny hillsides, as he watched her open it.

It was the deed to "Fletcher's."

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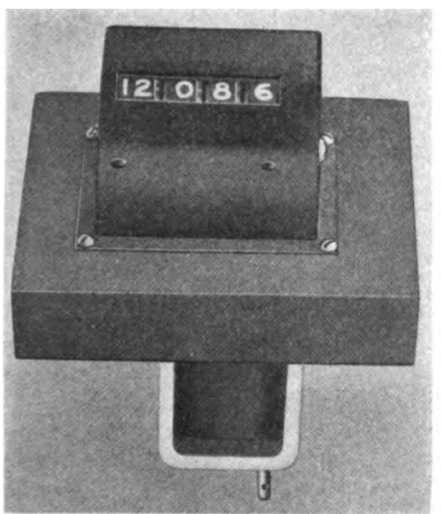
Time System for Operating Rooms and Method of Obtaining Standard Time

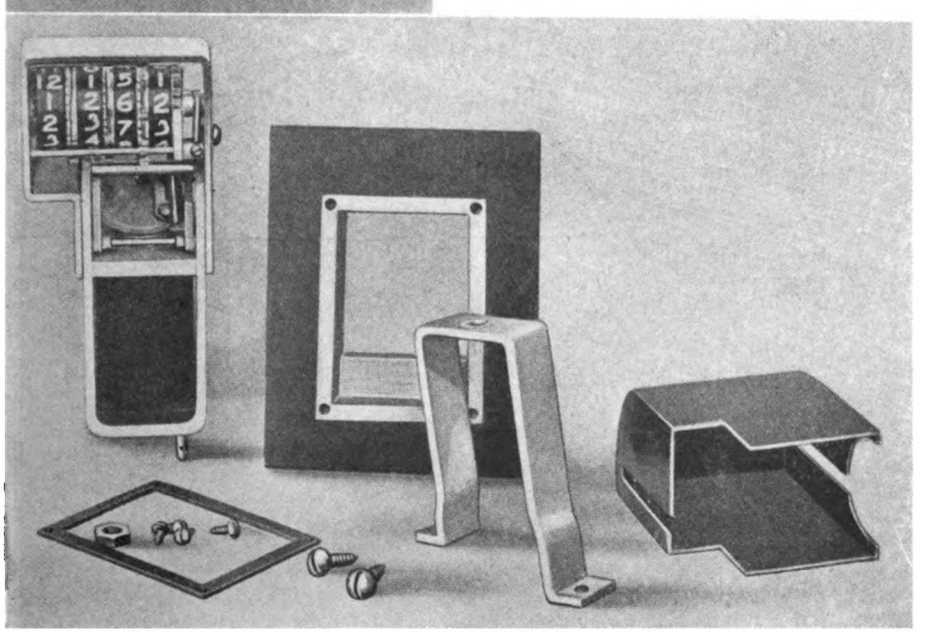
By J. S. Miller, District Inspector, Central Manhattan

MANHATTAN and Bronx Central Office operators no longer need refer to large clocks mounted on walls and other places in operating rooms to ascertain the time. Instead, devices known as position clocks (illustration No. 1) have been installed at each alternate "A" switchboard position throughout the division and are so placed that each clock is in the direct line of vision of two operators. The advantage derived from their use is manifest when it is realized that operators in the offices embraced in the territory have occasion to refer to the clocks 500,000 times every twenty-four hours, in timing calls and answering inquiries from subscribers.

The position clocks are provided with four dials which are so arranged that the time of day is indicated in hours, minutes, and tenths of minutes, and, although compact and easily read, are part of a very comprehensive system designed with a view to insuring an accurate and unfailing time service. The system consists of a grand master clock, located in the Western Union Telegraph Company's office at the Walker-Lispenard building; six district master clocks; and one building master clock in each office not provided with the district master clock; 1,076 position clocks at the "A" switchboard positions; also forty-seven secondary wall clocks distributed throughout the central offices in the division.

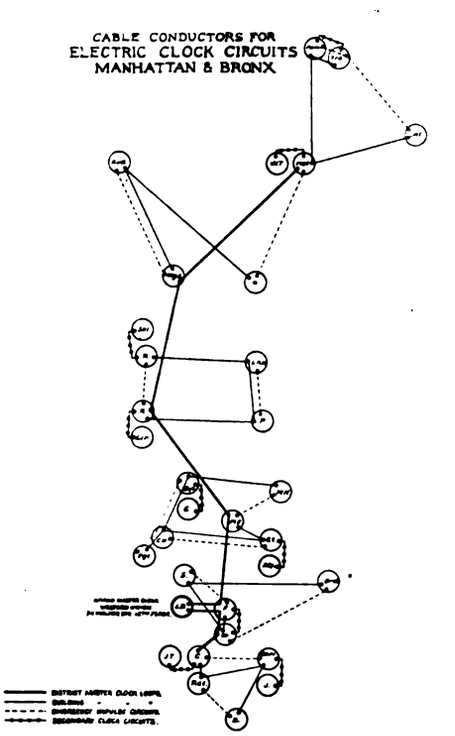
The entire system is electrically controlled. The grand master clock sends out hourly impulses, synchronizing the district master clocks. The district master clocks send out hourly impulses synchronizing the building master clocks, and the building master clocks send out impulses over two circuits—one every six seconds to the position clocks, and one every half minute to the secondary clocks. The district master clocks, in addition to regulating the building master clocks in their respective districts, also operate the position clocks and the secondary wall clocks in the buildings in which they are located. To operate the clock service as a whole, a system of subway cable conductors 56.4 miles in length is used. This system is shown in illustration No. 2, which also shows the district arrangement and the locations of the district master clocks.





1. The "Position Clock"

District master, building master, and secondary clocks are shown respectively in illustrations No. 3, No. 4, and No. 5. The district and building master clocks are provided with a regular clock movement and are electrically wound every hour. The position clocks are operated by a relay movement every six seconds, or ten times per minute. The secondary clocks are operated by a relay movement every half minute.



2. Showing District Arrangement and Locations of District Master Clocks

Associated with each district and building master clock are numerous relays controlled by these clocks and a group of transfer keys. The relays enter directly into the operation of the clock system and also provide a duplicate service so arranged that the position clocks can be operated by either service, dependent upon the position of the transfer keys. This emergency service is so complete that should a district or building master clock fail, its work will be performed by a district or building master clock in an adjoining office by setting the transfer keys in the reverse position. The transfer keys, a set of which is shown in illustration No. 6, are ordinarily placed at the first position of the "A" switchboard in each office. Illustration No. 7 shows the transfer keys at the end of the switchboard and two position clocks mounted on alternate positions as described above.

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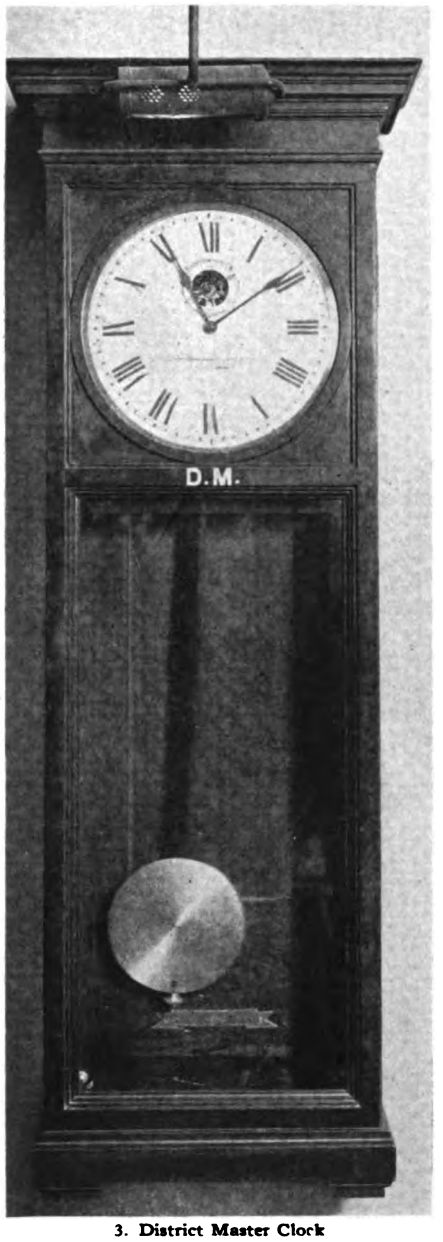
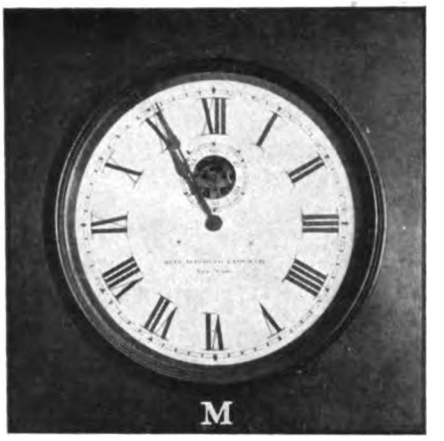
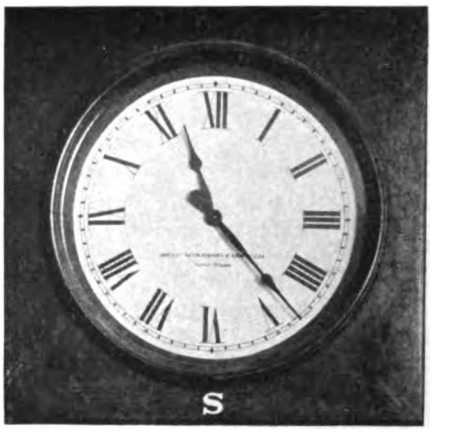


3. District Master Clock



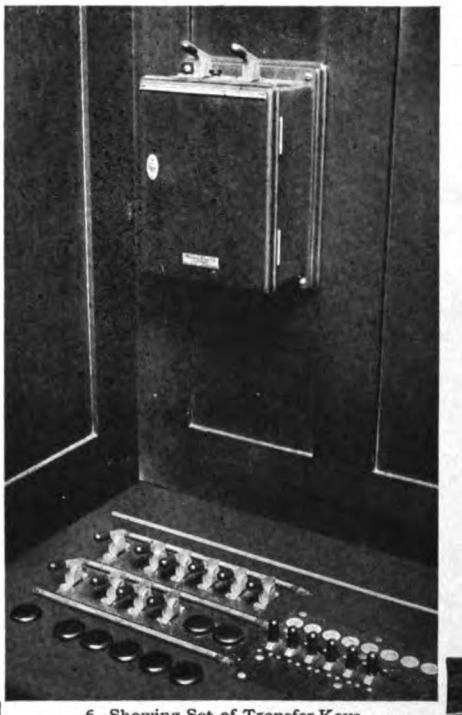
4. Building Master Time Clock



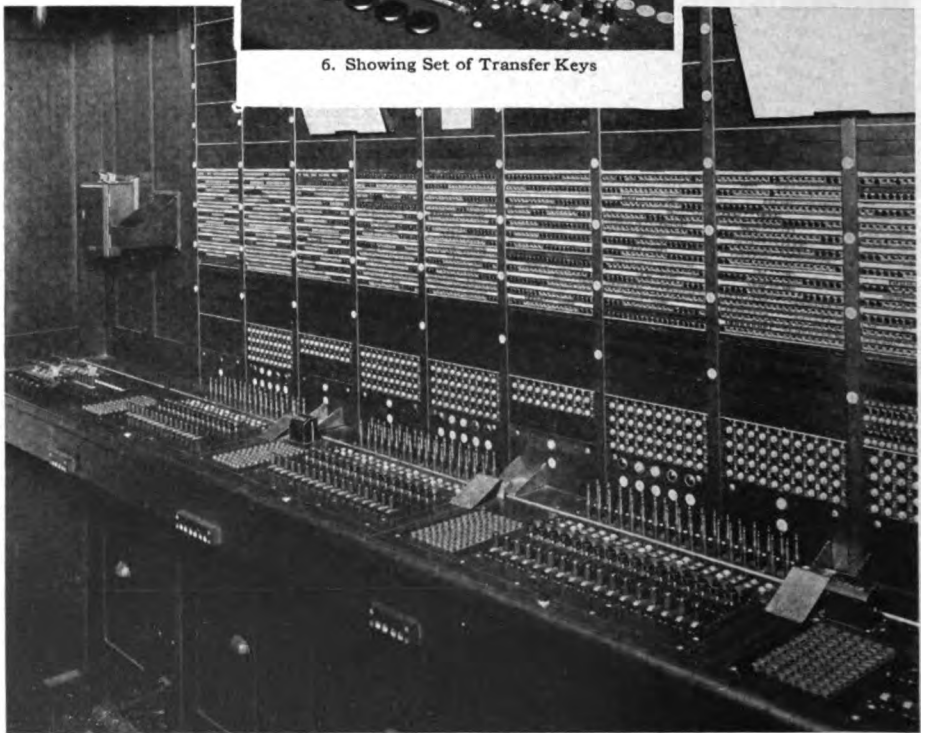
5. Secondary Time Clock

Time is obtained accurately by the astronomers at the observatory observing the transit of certain stars every clear night, which are due to cross the meridian at a known time. The exact instant of their transit is recorded electrically by means of a chronograph, which also records the seconds from a sidereal clock. The difference between the time the stars cross and the time of the sidereal clock, as recorded on the chronograph, shows the error of the clock.

The time signals sent out each day are wholly automatic and consist of a series of short marks produced on an open telegraphic circuit by the beats of a transmitting clock located at the observatory. The signals are given the widest possible dissemination over the lines of the Western Union Telegraph Company for an interval of three and five minutes immediately preced-



6. Showing Set of Transfer Keys



7. End of Switchboard, Showing Transfer Keys, and Two Position Clocks Mounted on Alternate Positions

The clocks have now been in use a number of months and during this period there has been no interruption of service in any office. This fact clearly demonstrates the reliability of the system.

The grand master clocks and the time service switchboard of the Western Union Telegraph Company and also the chronograph, which is described later, are shown in illustration No. 8. Two grand master clocks appear in this picture. The system, however, is controlled by one of these clocks. The second clock is for emergency service only. This plant not only furnishes time service to the Telephone Company, but to the entire city.

While alluding to Western Union time service, it may be interesting to state that since August, 1865, telegraphic time signals have been sent out daily (except Sundays and holidays) by the United States Naval Observatory at Washington, D. C.

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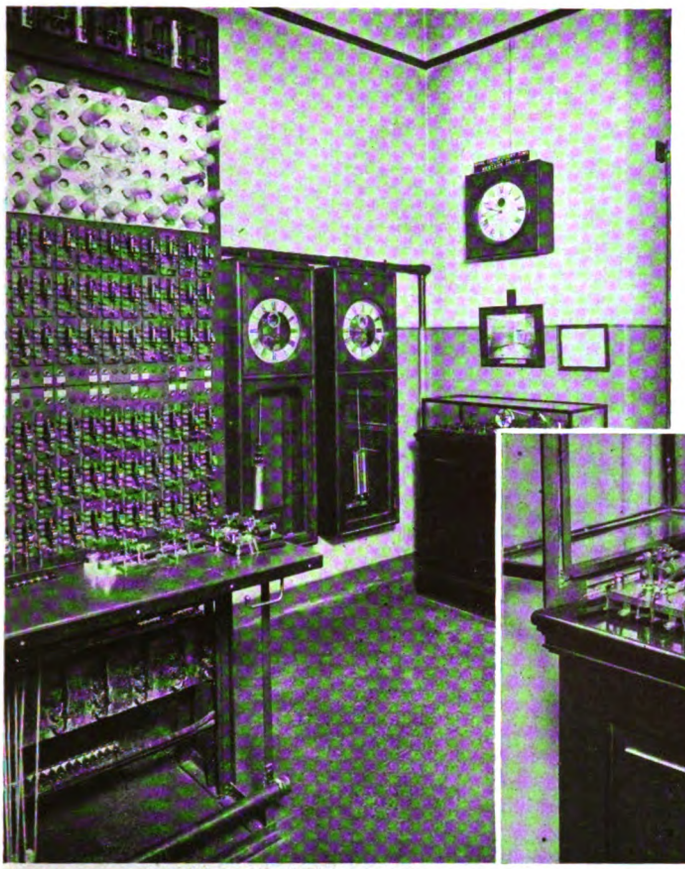
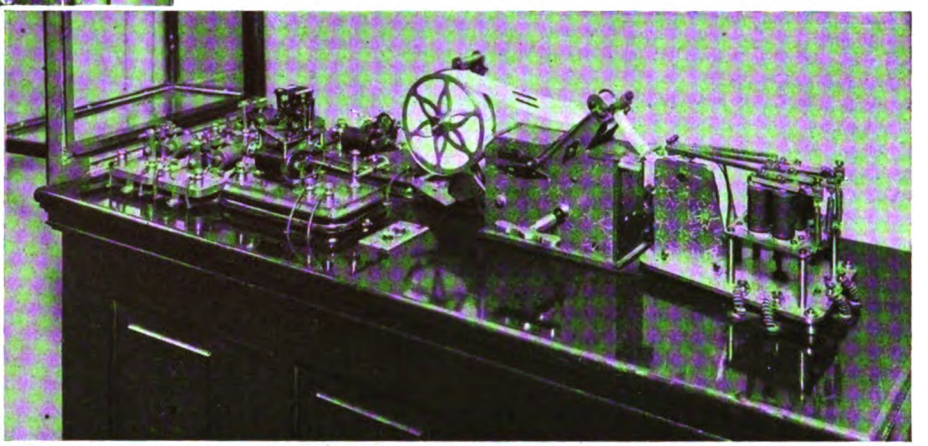


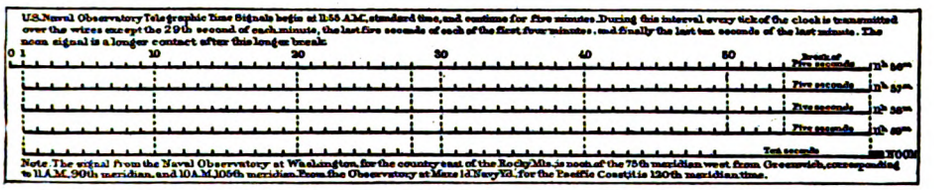
8. Grand Master Clocks and Time Service Switchboard of the Western Union Telegraph Company

and of clocks that are connected electrically at noon throw their local lines into circuit so that the noon signal drops the time balls and corrects the clocks.

Illustration No. 10 shows in detail the chronograph installed in the Western Union time service office. Two of the relays at the right are connected, one to the Washington time service circuit and the other to the Western Union grand master clock circuit, and are operated by electric impulses from these sources. The third is for emergency. The operation of each relay is recorded on the tape as shown in the illustration. As the tape moves at the uniform rate of two inches a second, the longitudinal difference, if any, in the position of the two lines on the tape shows the error of the Western Union grand master clock.



10. The Chronograph. Note the Longitudinal Lines Which Have Been Drawn on the Tape to Indicate the Variation in Time



9 Diagram Graphically Showing the Entire Series of Noon Signals Sent Out Daily Over the Wires

The writer is indebted to Mr. Bertrand R. Hawley, manager, Time Service Department, Western Union Telegraph Company, for information contained in this article relative to the Western Union time service and method of obtaining standard time.

ing noon, and ending at exactly noon of the seventy-fifth meridian, standard time.

For the country east of the Rocky Mountains, the signals are sent from the observatory at Washington, D. C.; for the country west of the Rocky Mountains, the signals are sent from the United States Observatory at Mare Island Navy Yard, California.

The entire series of signals, as sent from both of the observatories, is graphically shown as they appear on a chronograph tape—illustration No. 9. The electric connections of the transmitting clock sending these signals are such as to omit seconds of each minute, as shown by the breaks in the record. These breaks enable anyone who is listening to a telegraph instrument at any office that is cut into the circuit during the transmission of the signals to recognize the middle and beginning of each minute. At the fifty-ninth minute there is an interval of ten seconds, which is followed by the final noon signal. During this last long interval, or 10-second break, those who are in charge of time balls

Portion of Central Office Showing Building Master Clock on Wall and Position Clock on Switchboard

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Flood in Rochester

By R. M. Bruce, District Equipment Supervisor

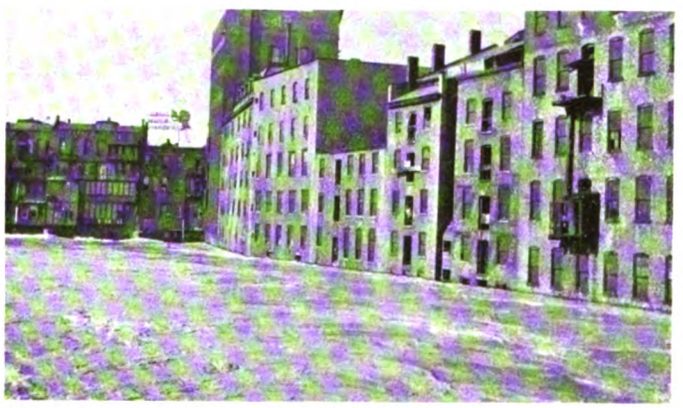
DURING the spring of 1913 the Genesee River overflowed its banks, causing much property loss to the business section of Rochester, due to the flooding of cellars and streets. It submerged many manholes of the New York Telephone Company and other wire using companies and caused much trouble to cables.

Court Street Bridge, Rochester

Since 1913 the city authorities have constructed a retaining wall along the river; have begun the work of deepening the river channel, and are now constructing a large sewer forty feet below the street level and parallel with the river. This they predicted would remove all danger, but the high water of 1916 broke all records and at several points flooded cellars and streets, making it necessary to use hip boots to navigate them. The water was soon diverted into the partly completed sewer and the damage to property was slight in comparison with the loss of 1913.

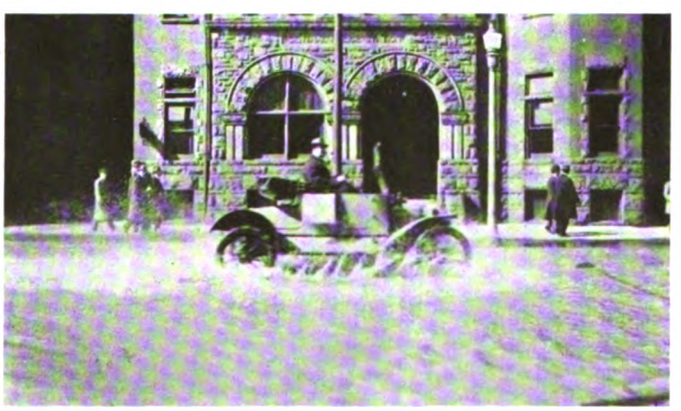
Anticipating trouble this year, because of the enormous amount of snow up the Genesee Valley, Mr. J. H. Brereton, who has charge of the cable construction department in the Rochester District, made an inspection of all cables in the flood area, with the gratifying result that not one failure was caused by the high water.

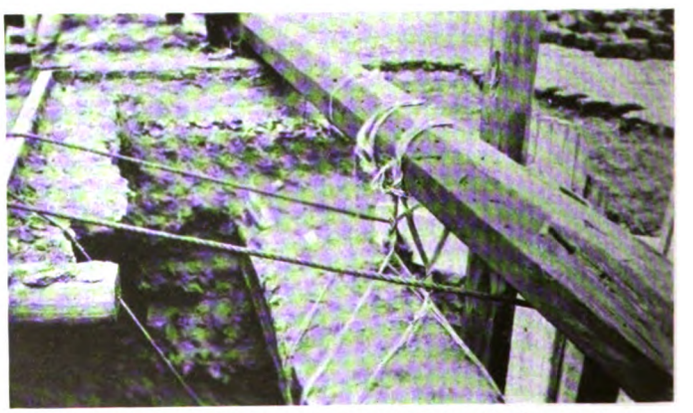
The river was at its highest point at twelve o'clock March 31. It was slightly receding and all danger was supposed to be past when at five o'clock April 1 Main street caved in, due to a break in an unused sewer. The water gradually cut out a hole about 20 feet deep and from 10 to 20 feet in width, undermining the pavement. Our subway crosses and parallels the street at this point, and it was necessary to bridge the hole by laying a 45 foot pole across. Our subway was suspended from the pole and has remained intact.


Blocks on East Side of River, Rochester

Aqueduct Which Carries the Erie Canal Across the River at Rochester

The measures which have been begun for controlling the waters of the Genesee saved many thousand dollars of damage to property and proved that when completed they will be sufficient to prevent further losses from the annual freshets.


J. H. Brereton, Supervisor of Cable Construction, Tearing Up Exchange Street, Rochester, in His "Flivver"


The Washout in Main Street, Rochester, and Method Employed to Support Telephone Subway

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The Floods in Tonawanda and Batavia

Long Bridge, Tonawanda. One of the Abutments Gave Way to the Rushing Flood. Boat Lodged Against Bridge

THE latter part of March the Tonawandas were visited by the most serious flood in years. Tonawanda Creek, which separates the cities of Tonawanda and North Tonawanda, and the counties of Erie and Niagara rose to such a height that the streets adjacent to the creek were several feet under water. Traffic on the Buffalo-Niagara trolleys was abandoned, and it was necessary for the people to use boats.

On March 28, one of the abutments of the Long Bridge, which spans this stream about two hundred yards from its outlet into the Niagara River, gave way to the rushing waters and let one side of the bridge down into the stream.

This bridge was the principal thoroughfare connecting the Twin Cities, and under it, hanging to the girders, were two cables, one of 600 and one of 200 pairs. These cables carried the Buffalo-Niagara Falls and the Buffalo-Tonawanda toll lines, as well as all the local lines serving the city of Tonawanda. Fortunately the cables were on the side of the bridge that did not leave the abutments so service was not interrupted.

The engineering department, seeing the necessity of taking care of these lines in case the entire bridge should be carried away, laid an emergency cable over the New York Central railroad bridge on top of the ties.

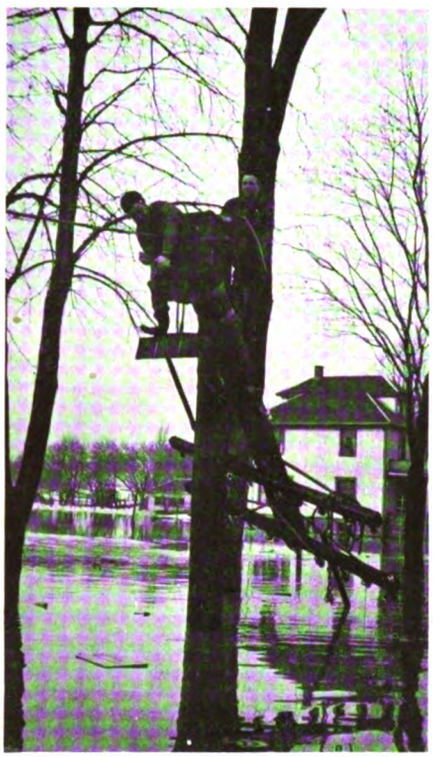
The cable was cut in and working the same day and was afterward lowered beneath the bridge. While our men were at work, several canal boats broke loose from their mooring, were carried down stream and jammed against the fallen bridge.

The linemen attracted considerable attention while they were working out over the water. But little did the people of the Tonawandas and vicinity realize that were it not for them, had the cables under the bridge been severed, the entire Niagara Frontier including Niagara Falls, Lewiston, Youngstown, LaSalle and the Tonawandas would have been unable to call Buffalo and that every Bell telephone in the city of Tonawanda would have been out of service.

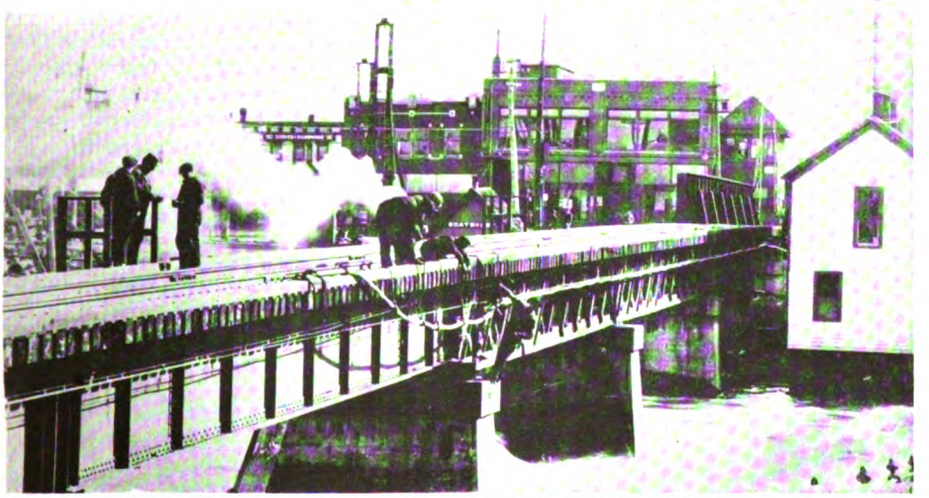
E. H. GAILOR,
Local Commercial Manager,
North Tonawanda.

AT Batavia, N. Y., the Tonawanda Creek began to overflow its banks on Tuesday morning, March 28, 1916. At about 10 A.M. the high water caused a cable failure which put 48 lines and 176 stations out of service. This cable trouble was cleared and all lines and stations restored to service about 10.35 P.M., Friday, March 31.

The traffic handled on March 28 reached a total of 24,025 calls, about



Corner Main and Brooklyn Streets, Batavia



Placing Emergency Cable in Position on N. Y. Central Bridge at Tonawanda

South Main Street, East of Lyon, Batavia

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10,000 calls over the average traffic carried on the two busiest days of the first three weeks of March. This was due partly to the suspension of the street car service, which occurred on Monday evening, March 27, and the car lines were not again operated until Friday morning, March 31. With one exception, however, all of our operators assigned to duty reached the central office each day, but it was necessary for the wire chief to go after two of the operators in a boat.

Linemen Out Repairing the Damage in Batavia

At about 3 P.M. Tuesday afternoon, March 28, all of the trunks to Buffalo, Warsaw and Attica went out of service and were not restored until about 10.30 on the following morning. Temporary Buffalo trunks were obtained by changes in the toll plant at LeRoy and Akron and the business was handled successfully.

The accompanying photographs show part of the flooded district which was only a few blocks away from the principal business section in Main street.

Divers Views

A GROUP of letters received from subscribers within a few days at various of the Company's offices offers in some degree the opportunity to "see oursel's as ithers see us," and at the same time shows us something of the "others" themselves.

Appreciative they are, and the variety of points of view, all centering about the same particular, the indispensability of telephone service, gives a fairly representative cross-section, so to speak, of the great mass of our subscribers.

It is noticeable that while some are only intent upon obtaining telephone service, and others are warmly appreciative of the service which is daily assisting them, there are others whose epicurean tastes demand the ideal. There is no criterion by which to judge telephone service except the service of the Bell System. Heedless that we already have the best in the world, the best that has ever been known, a subscriber will sometimes scorn the material facts and sue for perfection untrammeled by the practical.

The best service that has ever been experienced in any single instance he takes as his standard of demand. Often, in his absolute unfamiliarity with the processes involved, he demands the impossible, fretting, perhaps, because a call which must go through two or three offices is not completed with the rapidity of a local office call. The people who vehemently "jiggle the hook" would never dream, as passengers on subway or elevated, of wildly demonstrating impatience when a train failed to roll into the station as soon as their tickets dropped into the gate box. In a department store they wait patiently their turn to be waited upon, although they are consistently oblivious to other patrons of the telephone. But all this is but a spur in our striving toward the ideal. It is a part of the problem we have to handle. The engineers have already subjected the mechanical equipment to a degree that is marvelous in the light of the early difficulties. Every worker is bending toward the end of a yet more complete destruction of every retarding element in the rendering of telephone service.

Mr. G. J. Hafstrom, local commercial manager, Staten Island, forwards the following very interesting letter from a new subscriber, who had found the previous day that a telephone was indispensable to him, and for whom the instrument was installed within one hour and forty-five minutes from the receipt of the order:

DEAR MR. HAFSTROM: I want to thank you for the promptness with which the phone was installed in my house yesterday.

My little girl has been quite sick this past week, and my father-in-law is also in very bad shape; my wife naturally wants to be with both, and as this is impossible you can readily appreciate what a help the phone was yesterday.

Again thanking you for your kindness, I am,

Yours very truly,

H. L. EGBERT.

The second letter, from a New York subscriber, speaks for itself:

New York Telephone Company, 15 Dey St., New York City.

GENTLEMEN: I desire to express my thanks for the splendid service and satisfaction I got out of the two calls to the Moore & Scott Iron Works, San Francisco.

It is a great pleasure to write this to you, when we are always so apt to blame the Telephone Company for some of the small shortcomings we sometimes think we are subjected to.

Very sincerely yours,

DAVID C. REID.

Many and many of those who have had telephone-less neighbors will feel the vibration of a sympathetic chord, stirred by the following appeal from Nyack:

New York tele C.

On more time I write you this letter you will get the check for telephon I like to know if you gone put the box on to put the money on phone becuase so many person do not believe that they hafter pay to call any body on telephone, so if you be a pleased to send the man to put the box at soon is possible, I will close and I will signit.

Yours truly,

(Signature)

Hats off again (have we ever put them on?) to the Traffic:

DISTRICT ATTORNEY'S OFFICE, RICHMOND COUNTY, BOROUGH HALL, NEW BRIGHTON, N. Y.

March 22, 1916.

MR. G. J. HAFSTROM, *care New York Telephone Company, Tompkinsville, N. Y.*

MY DEAR MR. HAFSTROM: . . .

The service rendered to me at my home by operator No. 11 is certainly praiseworthy. It might likewise be added that the same degree of courtesy and expedition is exhibited by the other operators in charge of the different numbers installed in my office.

I am without any information as to the identity of the operators in question. (I casually learned that one in particular was No. 11.) I know how anxious you are to improve the service, and you will therefore understand the promptings which occasion this letter of commendation.

Believe me,

Very truly yours,

ALBERT C. FACH.

Words are but obstructions when feeling is deep. "Give me my telephone" could not be said more fervently than by the following correspondent, who, be it added, has never to our knowledge so much as met Mr. Wallace Irwin:

Manager, care Central Office.

DEAR SIR: In refer with request for my describe why your operator Disability our serves. Since many day we commute in line to call operator but however disconnected wire. Kind attend in your upon invested given us right serves.

Yours truly,

F. KITAMURA.

The minister of a small town called the butcher on the telephone.

"Send a dollar's worth of meat out to my house," he said. "If there is no one at home just poke it through the keyhole."—*Exchange.*

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The Value of First Aid Training

THE Plant Department of the Western Division has recently devised a new plan: that of sending a thoroughly trained and equipped man throughout the entire Division to combine two very useful functions, that of preaching Safety First and teaching First Aid.

This system of preaching and teaching has already shown results very gratifying to the originators. While it is too early to quote statistics, it has been noted by those who are in close touch with accidents that there has been a decrease in the number of accidents, and that minor injuries, such as cuts and bruises, have received proper First Aid treatment.

That this educational movement is of value to our men, not only as employees, but as husbands, fathers, etc., is strikingly demonstrated by the following story told by one of our employees who heard, heeded, and remembered the instructions given by the lecturer.

The story as told by Mr. Smith to our representative is as follows:

"My name is Louis Smith. I reside at No. 59 East Avenue, Albion, N. Y., and am employed as combination man at Medina, N. Y., under the supervision of George A. Bowen. I am forty-seven years of age, and have been in the employ of the Telephone Company for a period of sixteen years.

"A short time prior to March 1, 1916, I attended the Safety First and First Aid lecture given by the New York Telephone Company's First Aid lecturer at Middleport, N. Y., and, a day or so later, at Medina, N. Y. The value of this form of instruction appealed to me very strongly and I tried to memorize it thoroughly, not realizing, at that time, of what vital importance it was destined to be to me and mine.

"The night of March 1, 1916, was a very stormy one, snow fell and drifted into almost impassable drifts, the wind blew a gale. Our family retired early that night, and at about 11.45 P.M., I was hastily awakened by my wife, who, though badly frightened, managed to tell me that our little one, a child only two and one-half years old, was dangerously ill with convulsions. I sprang out of bed and ran to the child, to find it lying motionless, apparently lifeless, its eyes rolled back and set, its teeth tightly closed, jaws set, and black in the face. I remembered the instructions I had so recently heard and immediately looked to see how its pulse and respiration were. I found no trace of pulse and no evidence of breathing. I at once picked the baby up, had my wife place a woolen blanket on the floor, laid the baby face downward, drew the blanket about the child for warmth, and began to apply artificial respiration. In the meantime I instructed my wife to saturate cloths in hot water and to call Dr. Brodie on the telephone. I forced the child's mouth open with my thumb and had my son hold it open with a spoon. My wife brought hot cloths and applied them to the baby's throat and chest and back, under my instructions, while I continued the artificial respiration. I worked steadily for a period of about fifteen minutes before the child began to breathe naturally. You can easily imagine, if you have any children, that it seemed like fifteen hours, but you can never imagine, unless you have gone through a similar experience, the prayer of thanks to God that arose from my heart when I saw the first signs of returning life and consciousness in my baby. And you can only guess at the extent of my gratitude to the Company that sent a man to teach me the means of saving my own child's life.

"Dr. Brodie started for my house as soon as he received my wife's message, but the snowdrifts were so deep and the night so stormy that he could drive neither team nor automobile through and was obliged to wade through the drifts on foot. He came as fast as any man could come, but did not arrive at the house until 12.45 A.M., an hour afterward, and three-quarters of an hour after I had succeeded in bringing the child back to consciousness.

"When the doctor arrived he found the child breathing almost normally, though still weak and pale. He stated that the danger was past, and that I had done as well as many a doctor could have done. It was not necessary for Dr. Brodie to come again, as the child was entirely recovered before the doctor would leave, though, of course, quite weak.

"No one can measure the gratitude which Mrs. Smith and I feel toward the New York Telephone Company, whose interest in its employees' welfare has made it possible for me to learn the things which helped me save my own baby's life." (Signed) LOUIS SMITH.

P. B. X.

"I wanted a star in front of my name in the telephone book, and the clerk said that was only for folks that had a P. B. X."

"What did you tell him?"

"Told him my name was Percy Benjamin Xavier Jones."—*The Transmitter.*

Sled Improvised From Material That Was Being Taken to a Job

The Storms of December

THE storms of December made the roads impassable for any vehicle. The picture shows how Construction Foreman Benson of Westchester got through. His truck being too heavy to haul through the snowdrifts, he improvised a sled from material that was being taken to the job he had in hand. Two ten-pin arms were used as runners, a ten-pin arm cut in two made the crosspieces, the curved ends on the runners were bent crossarm braces, and crossarm bolts held the framework securely in place. With some planks for a platform, a serviceable sled was ready for use.

News Is News

If anyone has—

Died.
Eloped.
Married.
Divorced.
Left town.
Embezzled.
Had a fire.
Sold a farm.
Had a baby.
Been arrested.
Come to town.
Bought a home.
Committed a murder.
Fallen from an aeroplane.
That's news—telephone us.

—*The York (S. C.) News.*

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Prophecy Versus Facts

By C. F. McCord, Local Commercial Manager, Passaic

"NOW as to hearing a sermon to-day, if you wish to do so, you can either go to a church to hear it or stay at home."

"How am I to hear it if I stay at home?"

"Simply by accompanying us to the music room at the proper hour and selecting an easy chair. There are some who still prefer to hear sermons in church, but most of our preaching, like our musical performances, is not in public, but delivered in acoustically prepared chambers, connected by wire with subscribers' houses. If you prefer to go to a church I shall be glad to accompany you, but I really don't believe you are likely to hear anywhere a better discourse than you will at home. I see by the paper that Mr. Barton is to preach this morning, and he preaches only by telephone, and to audiences often reaching 150,000."

"The novelty of the experience of hearing a sermon under such circumstances would incline me to be one of Mr. Barton's hearers, if for no other reason," I said.

We had no more than seated ourselves comfortably when the tinkle of a bell was heard, and a few moments after the voice of a man, at the pitch of ordinary conversation, addressed us, with an effect of proceeding from an invisible person in the room.—

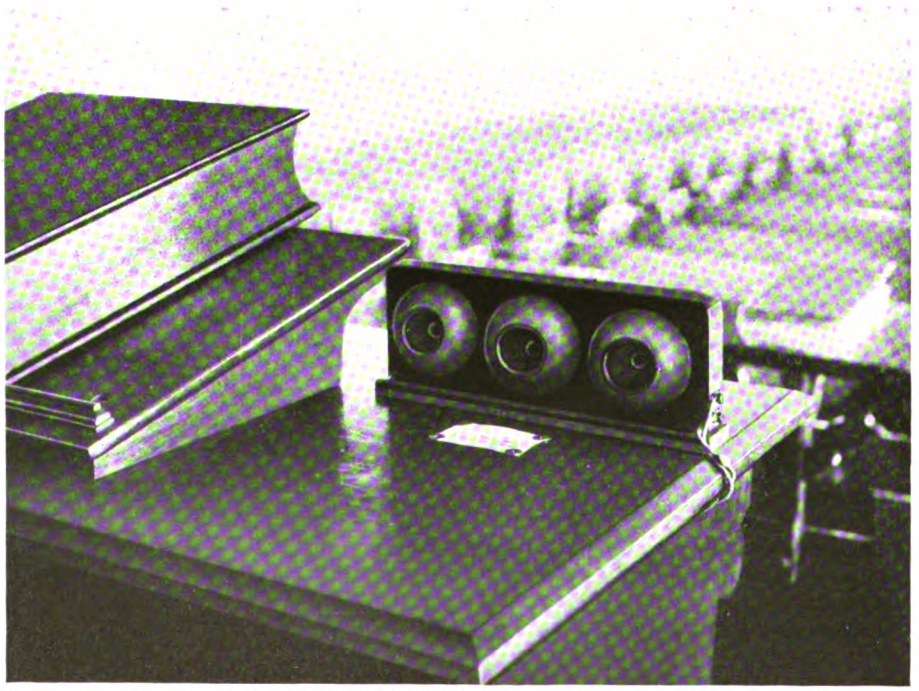
(From "Looking Backward" by Edward Bellamy.)

These words were written in 1887 and the dialogue was supposed to be occurring in the year 2000. While possessed of an imagination sufficiently marvelous to enable him to give us a picture of a future ideal social and industrial system, the author of this extremely interesting book erred woefully when he figured that we would require 113 years to adapt the telephone to the purpose indicated in the foregoing extract. On the contrary, we have beaten him out by considerably more than eighty-four years, for the particular installation at Passaic to be described in this article is by no means the first of its kind nor is it the only application of the idea.

Mrs. Jacob Bakelaar at Her Home Listening to Services and Sermon in the Netherland Reformed Church

About five years ago, a feature of the electrical shows held in Madison Square Garden was the telephone booths into which one could step and hear the songs and jokes as they were given at near-by musical shows. We should, perhaps, be charitable in our judgment of Mr. Bellamy, for the first complete and intelligent sentence by telephone had been spoken only eleven years, at the time he wrote, and the art of telephony, then just passing from the experimental period to the development period, was but lightly regarded by the public.

During the month of March, 1916, we installed special equipment at the residence of Mrs. Jacob Bakelaar and at the Netherland Reformed Church, at Passaic, N. J. The apparatus installed at the church consisted of a special microphone transmitter, one No. 29 induction coil, one No. 21-D condenser, 2 No. 6 dry cells, and a No. 6002-B key. The apparatus installed at the residence consisted of one No. 190 jack, one No. 85 plug and a special low resistance receiver. The line from the church to the residence is about one mile long and is practically all in No. 19 gauge cable. In the central office the line is strapped



Pulpit of the Netherland Reformed Church, Passaic, N. J., Equipped With Special Telephone Transmitters

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across the main frame and does not go through the cord circuit. The special microphone transmitter used in this circuit is known as a three-unit transmitter. The three units are connected in multiple in a small black metal case approximately 10 inches long, 5 inches high, and 2 inches deep. This transmitter is mounted on the reading desk in the chancel of the church.

Mrs. Bakelaar, for whom the apparatus was installed, is shown in the accompanying photograph seated in her armchair at home listening to the sermon her pastor is delivering from the pulpit of the church in another part of the city. During the last four years Mrs. Bakelaar has only been able to attend one church service, and two years have elapsed since that occasion. The transmission is highly satisfactory and by forming a group near the receiver, five or six people can hear every sound originating in the church.

Unused to Telephones

A large firm in Aberdeen recently engaged as office boy a raw country youth. It was part of his duties to attend to the telephone in his master's absence. When first called upon to answer the bell, in reply to the usual query, "Are you there?" he nodded assent. Again the question came, and still again, and each time the boy gave an answering nod. When the question came for the fourth time, however, the boy, losing his temper, roared through the telephone:

"Man, a'bye blind? I've been noddin' me head off for the last half hour!"—*Pearson's Weekly.*

Putting the Telephone to Work

UNDOUBTEDLY there are some things that can't be sold by telephone, but they are not easy to find. Often the business in which the telephone seems least useful is found elsewhere to be conducted almost exclusively by wire. One merchant may insist that his wares cannot be sold by telephone, while his competitor across the street may credit half his business to the telephone. Each day brings word of some new triumph of telephone salesmanship.

A dealer in phonograph records in Newark keeps a talking machine near his telephone and during dull hours demonstrates new records to his telephone customers. His customers are encouraged to telephone him when they want to hear a particular record.

A New Jersey dealer in automobile tires and accessories keeps a lookout on the busy street in front of his store for passing machines. When he sees any with worn tires or any lacking some of the equipment he carries, he notes the license number on the car, telephones the State Department of Motor Vehicles for the owner's name and then canvasses the prospect by telephone.

A Fifth Avenue jeweler sells clocks by telephone, setting off the chimes with the telephone held alongside.

Still another use to which the telephone recently has been put is in securing members to organizations. This innovation, while less spectacular than the aforementioned, serves to open up a big and profitable field for telephone usefulness. Every fall the Brooklyn Institute of Arts and Sciences conducts a systematic telephone campaign, seeking new members and subscribers among their prospects listed in the telephone directory.

Recently, the Advertising Club of New York conducted a lively membership contest to bring its roster up to the limit set by its constitution. The busy advertising men found it difficult to get out among their confrères and boost the new organization. One day a member bethought him of his telephone, turned to it and before he had hung up the receiver, secured five new members. He reported his experience to the chairman of the Membership Committee, who at once issued a bulletin to the entire membership, suggesting that the telephone be enlisted in the campaign. The contestants were quick to take the tip and soon the applications began coming in in such large numbers that a hurried meeting of the Membership Committee was called. The contest was declared closed, the roster full, the dues raised and a waiting list begun.

Reunion at First Meeting of Transcontinental Telephone Men

THOUGH they had known each other a long time, they had never met before—the group of telephone men who assembled for dinner in the Gothic Room at Murray's on the evening of March 24. In person at least, they had never met, but they had been together over the long distance wire so many times that they were now old friends.

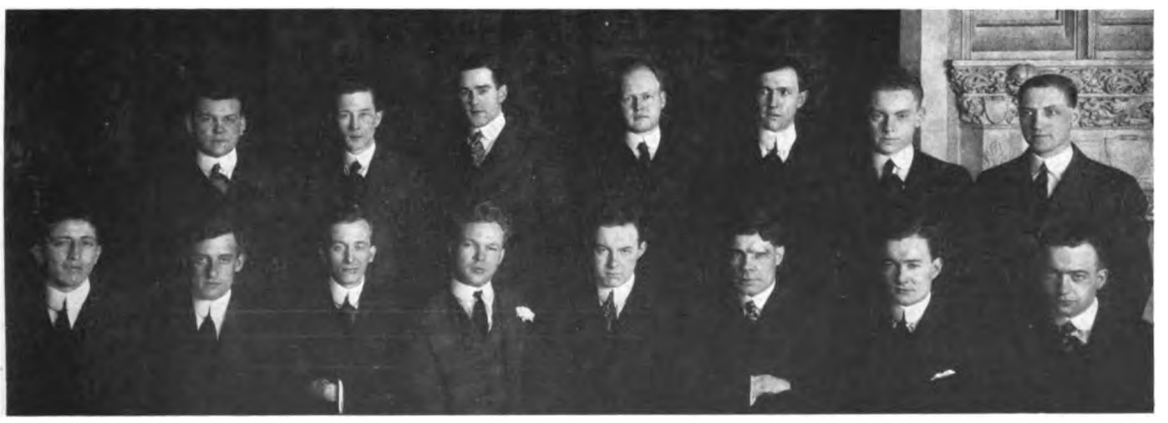
In the busy telephone days during the first of last year, they had met for the first time, when each one of them was stationed at some city, between the Atlantic and the Pacific. Each man had been a part of the carefully evolved system which insured beforehand the success of every detail in the demonstration of January 25, 1915, when transcontinental telephoning became a reality.

At eight-thirty chairs were drawn up to the long table and the men sat around it in the order of their former geographical locations. At one end of the table was Mr. Wyllner, representing New York, the source of those daily telephone demonstrations which delighted so many thousands at the Exposition, and at the other end, Mr. Leslie, representing San Francisco, and representing, too, in his good nature, the spirit in which those demonstrations were received in the little show house in the Liberal Arts building. Along each side of the table were those who "manned the guns" at the various intermediate stations of the ocean to ocean telephone highway, and the reminiscences of Transcontinental incidents and the round of good jokes that were kept up bespoke an acquaintance of long standing and nearness more real than could be measured geographically.

To Mr. Leslie and to Mr. Wyllner, representing New York and San Francisco, toasts were drunk standing.

If the dinner had been for those who helped make a success of the opening of the Transcontinental Line the table would have needed to be as long as from here to San Francisco, so in order to have a crowd to fit inside one room, it was decided that this should be a dinner for those men who were actually on the line, on the main Transcontinental circuit, during the period of preparation for the celebration of January 25, 1915. They were:

A. B. Clark, W. W. Wyllner, H. Martin, Jr., H. H. Bliss, O. A. Pawlick, R. J. Rutherford, E. O. Scriven, B. W. Kendall, R. J. Egner, G. R. Pigman, J. K. Rockey, W. N. Thompson, W. M. Marsters. W. N. Rorer, R. E. Mattingly, and H. A. Leslie.



THE TRANSCONTINENTAL CROWD AT MURRAY'S

Left to Right: Top Row—R. E. Mattingly; A. B. Clark; W. N. Rorer; B. W. Kendall; E. O. Scriven; R. J. Rutherford; G. R. Pigman
Front Row: J. K. Rockey; W. W. Wyllner; O. A. Pawlick; W. N. Thompson; R. J. Egner; H. A. Leslie; H. Martin, Jr.; W. M. Marsters

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The TREND of REGULATION

By R. V. Marye, General Attorney

Maryland Rate Case

AFTER an exhaustive investigation, initiated on its own motion and extending over a period of more than two years, the Public Service Commission of Maryland, on March 8, 1916, rendered its decision *In the Matter of the Rates and Charges, Property and Affairs within the State of Maryland of The Chesapeake and Potomac Telephone Company of Baltimore City.*

The investigation was conducted under the direction of Mr. Osborne I. Yellott, the assistant general counsel of the Commission, who had been appointed by the Governor as special People's Counsel for the purpose, and consistently followed a plan which he laid out, based upon the full coöperation of the Company in a business-like manner as contra-distinguished from the ordinary rate investigation contested along partisan lines by representatives of the public on the one hand and of the Company on the other. The Protective Telephone Association of Baltimore was represented by Messrs. Ogle Marbury and H. Findlay French, and the Company by Mr. R. V. Marye, its general attorney, and Messrs. Bernard Carter & Sons, of Baltimore City.

In its opinion the Commission stated that it was most gratifying to be able to say that the coöperation of the Company had done much to lighten what would otherwise have been a most onerous task, and also had resulted in a great saving of expense both to the State and to the Company.

Basis for Making Rates

The opinion states that the basis for all calculations for rates was the fair value of the Company's property, physical and non-physical, used and useful in rendering service to the public throughout the State, and that the ascertainment of that value was not controlled by artificial rules nor was it a matter of formulae, but there must be a reasonable judgment, having its basis in a proper consideration of all relevant facts, which include the original cost of the property, as nearly as ascertainable; the reproduction cost of the property; the market value of the bonds and stocks, and, finally, the earning value of the property under existing rates—none of which, however, was controlling.

Physical Property

The appraisals of the physical property submitted by the engineers of the Commission and of the Company, respectively, included real estate, equipment, exchange and toll lines, rights-of-way, and working capital, and were so set up as to show the directly distributed costs and the construction overheads applicable thereto.

Directly Distributed Costs: Under this term were covered all costs that could be directly allocated or apportioned to the fixed capital accounts of the Company to which they relate. The Commission accepted the directly distributed costs of real estate, equipment, and lines, which the engineers of the Commission and of the Company after extended conferences had agreed upon, and for rights-of-way adopted the values submitted by the Company.

Construction Overheads: Construction overheads included omissions and contingencies, engineering, superintendence, law expenses, executive expenses, taxes, insurance, and interest during construction, all of which the Commission states are in no sense intangible, but form just as much a part of the physical property as do material and labor. The construction overheads expressed in percentages, as submitted by the Special Expert of the Commission, equated to 13.66% of the total of directly distributed costs, whereas those submitted by the engineer of the Company equated to 19.36% of the same base. The Commission allowed 17.67%, which were the figures of the Company's engineer, except that interest during the period of construction was taken at six per cent. (6%) instead of eight per cent. (8%) as claimed by the Company.

Working Capital

The Commission found that every utility must carry a reasonable stock of material and supplies necessary for construction and repairs and also a certain amount of liquid assets, and adopted, after a slight modification, the amount submitted by the Company, covering the items of advances to employees, bank deposits, revenue earned but not collected, materials, and supplies.

Depreciation

The Commission refused to adopt the views urgently pressed by counsel for the Company, *first*, that the fairest test of the value of the property of the Company was its service value, and inasmuch as it was conceded that the property of this Company had been and was being maintained in such condition that it could render and in fact was rendering, just as good service as could a brand new plant, no deduction whatever from the reproduction cost new, as found by the Commission, should be made simply because the property was not, in fact, brand new; and, *second*, if any deduction were made by reason of the fact that the plant was not new, such deduction should cover only such deterioration or shrinkage as could be found from an actual and minute examination and test of the physical plant as now found in place, without any abatement whatever dependent upon mere speculation as to what the future might hold in store by reason of new inventions or public requirements. The Commission held that under the decisions of the Supreme Court of the United States, and on reason as the Commission saw it, not only should substantial abatement be made for depreciation but that it should be made on a theoretical basis, taking into consideration future obsolescence and inadequacy as well as the actual present condition ascertainable from inspection and tests. In order to ascertain the amount of abatement for depreciation the Commission held that inasmuch as it was not only the right but the duty of the Company currently to appropriate from earnings into a reserve amounts sufficient to preserve the integrity of the investment and to make such replacements of the physical property as may be necessary from time to time, the best line of approach was to ascertain the average unexpended balance which should be held in such a reserve for such a purpose. From the history of this Company, as well as from the opinions of the experts who testified, the Commission concluded that twenty per cent. (20%) of the cost new of the physical property would represent the average amount of unexpended balance that should be in such a reserve, and as this should be invested in additions to the plant, the Company would be entitled to earn upon eighty per cent. (80%) of the total investment or plant thus found; therefore, the Commission concluded that in order to arrive at the fair value of the physical property it should deduct twenty per cent. (20%) of the reproduction cost new which it had previously found. This twenty per cent (20%) was reached by the Commission by multiplying the average age of the physical property, which it found to be slightly over three years, by the composite percentage of the so-called life tables which the Company currently used in making its appropriations to its depreciation reserve, to wit, six per cent. (6%). Finding that the normal unexpended balance in the reserve should equal approximately twenty per cent. (20%) of the cost new of the physical plant, whereas the unexpended balance in the actual reserve which this Company had amounted to only ten per cent. (10%), the Commission held that, in view of the fact that the net earnings of the Company in the past had not been unreasonable, the Company had a claim against the public for the difference, hence the Company should continue such appropriations out of earnings and invest the proceeds thereof in additions to the plant until the reserve shall equal twenty per cent. (20%) of the then reproduction cost new of the property, at which time the Company could capitalize an amount equal to ten per cent. (10%) of the present reproduction cost new.

Non-physical or Intangible Values

Under its definition of non-physical or intangible property the Commission included, (1) Organization and Development; (2) Cost of Attaching Business; (3) Deficits from Operation; (4) Easements in Public Highways, and (5) Promoters' Remuneration and Cost of Money, all of which the Commission held to be proper items for consideration but were non-physical in their nature as they attach to the business rather than to the items of physical property.

Organization and Development. From the testimony in this case, as well as from consideration of the opinions of courts and others, the Commission found that an amount equal to two per cent. (2%) of the reproduction cost new of the physical property should be allowed to cover the organization and development of the forces in the various departments of the Company necessary to operate the same after it should have been constructed.

Cost of Attaching Business. Recognizing that there was a value to the property of this Company by reason of the fact that it had a business already attached, the Commission, after considering all the elements, concluded that the fairest measure therefore was the amount which this Company in its present experience was expending in securing new customers, which for the past three years had averaged about five dollars ($5) per telephone station throughout the State.

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Deficits from Operation. While conceding that during the early operations of any company there must be deficits from operation until the company could be placed upon a paying basis, and hence that it would allow deficits in any case where such were proven by competent evidence, the Commission was not satisfied with the weight of evidence presented to it in this case. The engineers for the Commission and those for the Company produced calculations indicating past deficits in the actual operations of this Company, and also their estimates based upon hypothetical assumptions as to the probable results of early operations of a new model company starting new under regulation. The Commission said that it could not accept any calculations for the past deficits of this Company because it would have to assume that throughout all the years every entry on the books had been properly made as between construction and operating expense, and furthermore, would have to assume that the Company had continuously been efficiently managed without negligence or mistakes. It also refused to accept the estimates of the deficits of a hypothetical company starting new, because such were found solely upon the judgment and opinion of the engineers and had no basis of fact or actual experience in support thereof. Hence the Commission made no allowance whatever for deficits from operation on any theory.

Easements in Public Highways. The Commission found that under the decisions of the courts of Maryland the actual occupation of the highways, that is, the user of the streets by a company pursuant to the right granted in the franchise, constituted property belonging to the company upon which it would be entitled to earn if a value therefor could be shown. In this case the Company under an ordinance granted by the City of Baltimore paid to the city a specified annual rental per lineal foot of street occupied, and the Commission held that, neither from the evidence produced nor by means of any measure which itself could devise, could it find an equity belonging to the Company in excess of the actual money rental which it annually paid to the city, and, therefore, it did not feel that it could make any allowance to this Company for its easements.

Promoters' remuneration and cost of money. The Commission found that in starting an enterprise of any magnitude, remuneration would have to be paid to someone to interest investors in the enterprise and, in addition thereto, costs would necessarily be incurred in securing the money necessary for construction. It also held that the evidence in this case conclusively showed that for such a company as this a fair amount for promoters' remuneration would be five per cent. (5%) of the reproduction cost new of the physical property, and that the cost of securing the necessary capital would amount to another five per cent. (5%) of the same base, and that this ten per cent. (10%) of the cost new of the physical property would either have to be capitalized and added to the base upon which the Company would be entitled to earn or such costs as they occurred could be currently liquidated as operating expenses after the Company got into successful operation; in either event "the public pays the bill." For reasons peculiar to this Company, the Commission concluded that it would not be proper to capitalize the said ten per cent. (10%), but to permit the Company to pursue its present practice of liquidating the same as operating expenses—for the following reasons: This Company is an operating company and a part of the great Bell System, of which the American Telephone and Telegraph Company is the parent company. The American Company holds a majority of the stock of the Associated Operating Companies. It operates no local exchanges itself, but does operate toll lines covering the entire country and interconnecting the exchanges of the various Associated Companies, and it also owns the majority of stock of the Western Electric Company, which manufactures all of the equipment used by the operating telephone companies and also acts as their purchasing agent for supplies of all kinds. The evidence further showed that the American Company organizes and finances the operating companies in the early stages and starts them in the business, giving them the benefit of its credit and, in instances, supplying them with all the funds necessary to meet operations. It protects the operating companies in the use of all patents and maintains a force of expert engineers who design, create, and standardize new equipment as well as continuously carry on experimental work in every line of the telephone business. It also attends to matters of accounting in its various branches and maintains a large and highly trained Legal Department, the services of which are at the disposal of the operating companies, as are also the advice and assistance of its Executive Department, the value of which the Commission holds it would be difficult to estimate. The American Company also owns, keeps in repair, and supplies to the operating companies all of the telephone sets which they find necessary in their business. Originally such instruments were supplied to the operating companies at a fixed rental per set, but in 1902 it was found better to consider the instruments as furnished as a part of the general services supplied by the American Company, and for the use of such instruments, together with all of the various and sundry other services furnished the operating companies, each operating company should pay four and one-half per cent. (4½%) of its gross telephone earnings to the American Company. Under this arrangement, which the Commission finds "to be of great value to the public in this State," the cost of promotion and of financing in the past has been met by the American Company, and, therefore, it would not be proper to capitalize the same in this case but to treat the said four and one-half per cent. (4½%) as a proper operating expense, and so the Commission considered it in determining the net revenues of this Company.

Fair Value

By adding together the various items thus held proper capital charges the Commission found as a basis for testing rates a valuation substantially in excess of the values as carried on the books of the Company and also in excess of the total amount of its outstanding liabilities.

Net Earnings

Accepting the present operating expenses of the Company as proper, including its appropriations for depreciation and the payments to the American Company, the Commission finds that the net revenues produced by the existing rates equates to approximately 5.82 per cent. of the fair value of its property, which the Commission holds is not unreasonable.

Rate of Return

Appreciating that an enlightened public policy required it to protect the credit of utilities subject to its jurisdiction, and recognizing that the vital interests of the investing public lay in the net earnings of a company from its operations as a whole, the Commission held that, in order to determine the fair rate of return for this Company in Maryland, due consideration must be given to the peculiar hazards of the telephone business and also to what would not only protect the present investment therein but would also invite and encourage the investment of more and more new money in such an enterprise. After weighing the testimony in this case, and in view of its prior decisions in other cases, it finds that a rate of eight per cent. (8%) on the fair value of the property as a whole in the State of Maryland, as hereinbefore determined, is fair as a permissible maximum return, but states that it does not mean thereby to authorize this Company to raise its existing rates so that they might yield such eight per cent. (8%) upon such value, but intends only to hold that this Company's present schedules as a whole will not be reduced until they yield in excess of said eight per cent. (8%), the Commission reserving to itself as a matter of duty and right the power to correct any unjust discriminations or inequalities as between individuals or localities which may hereafter be shown to exist.

Organization Changes

Central Division

Traffic Department

Miss Alma Knauer appointed chief operator at Oneida, vice Miss Josephine Conley, resigned.

New Jersey Division

Plant Department

Fred J. Scudder, formerly chief switchman, appointed engineer, Newark district.

Richard Dennison, formerly lineman, appointed foreman loop gangs, Jersey City district.

Hudson Division

A. G. Smith, district wire chief, Schenectady, appointed district toll wire chief, Schenectady.

C. A. Rogers, district wire chief, Kingston, appointed district toll wire chief, Kingston.

C. Fischle, inspector, Albany, appointed district toll wire chief, Albany.

T. White, wire chief, Newburgh, appointed district wire chief, Kingston.

W. H. Terriault, wire chief, Glens Falls, appointed district wire chief, Schenectady.

Western Division

C. W. Paland, Jr., engineer in the equipment engineer's force, Western division, transferred to the Engineering Department at New York.

C. W. McPherson, foreman on private branch exchange installation work, Buffalo, transferred to the position of engineer in the Equipment engineer's force, Western division.

Use and Abuse of the Telephone

Most people who have had the telephone installed for any length of time, and especially tradesmen, will agree that it is as much a nuisance as a help in business. Like the tram car in the city, its utility has been abused. And one of the worst abuses of the telephone has been shown during the war. At times when enemy aircraft have been raiding the coast, public officials have been pestered by inquisitive telephone subscribers wanting to learn particulars. Berwick has been little better than other towns in this respect, and the practice has been so bad that the Government have at length been compelled to issue the following warning: On the occasion of the recent air raid the transmission of official telephone messages of urgent importance was seriously interfered with at several places by inconsiderate and unnecessary use of the telephone by private subscribers who called up the police and other public officials. The Postmaster-General earnestly appeals to the public to use the telephone as little as possible on such occasions, and on no account call up the police or other public officials on unimportant or merely personal matters. If this warning is not regarded it will become necessary for the Postmaster-General to curtail the facilities afforded to private persons on occasions of public emergency.—*Berwick Journal, February 17, Berwick-upon-Tweed, England.*

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Transcontinental Demonstrations

Transcontinental Telephone Demonstration at the Third Annual Dinner of the Graduates of the United States Military Academy, Held at the Hotel Astor, New York, March 18, 1916

Graduates of the United States Military Academy

THE third annual dinner of the graduates of the United States Military Academy was held at the Hotel Astor on March 18, and connection was established by the Transcontinental Telephone Line with Chicago and San Francisco, where audiences of 28 and 70, respectively, saluted the 350 in New York.

Colonel Bellinger, quartermaster, United States Army, Department of the East, introduced Maj. W. N. Dykman, who acted as toastmaster. The program began with toasts to "the President of the United States," and to "Alma Mater," after which the address on the Triumph of Science was given by Mr. Schmidt, and Mr. Casler, with a few remarks on "Preparedness from the Standpoint of a Telephone Man," opened the Transcontinental Line.

The Long Corps yell was given, and returned from Chicago and San Francisco. Then came greetings between the following graduates: Colonel Tillson, '78, N. Y.; General Bell, '78, San Francisco; Mr. E. H. Merrill, '78, San Francisco; Mr. C. P. Scoville, '77, Chicago; Major Dykman, '75, N. Y.; Mr. H. B. Herr, '66, Chicago; General Woodruff, '71, San Francisco; Colonel W. H. Bewer, '65, San Francisco; General King, Chicago; Mr. Loyall Farragut, '68, N. Y.; Colonel Bellinger, '84, N. Y.; Mr. Holabird, '07, Chicago; Colonel Whitney, '92, San Francisco; Colonel W. H. Hart, '88, San Francisco; Mr. E. C. Young, '87, Chicago; Captain Carter, '99, N. Y.; Captain Perkins, '99, San Francisco; Mr. G. W. Peck, N. Y.; Mr. H. G. Bates, San Francisco; Mr. Copp, '04, N. Y.; Lieutenant Strong, '04, Chicago; Lieutenant Davis, '04, San Francisco; Lieutenant Bethel, '15, N. Y.; Lieutenant Young, '15, Chicago; Lieutenant McTaggart, '15, San Francisco.

At intervals during the conversations the program was varied by musical selections. Mr. Carl Jorn, the famous tenor of the Metropolitan Opera Company, sang "When the Boys Come Home," from New York. "America," "The Star Spangled Banner," and "A Little Gray Home in the West," were transmitted from San Francisco, and "Taps" from New York.

At the conclusion of the demonstration Major Dykman called for a vote of thanks to the Telephone Company, and, as the most hearty expression of their appreciation, the audience gave the Long Corps yell.

Junior Banking Officers' Association

DIRECTORS, officers and employees of the American Exchange National Bank, the Pacific Bank of New York, and members of the Junior Banking Officers' Association, to the total number of 250, were connected by telephone with twenty prominent bankers in Chicago and five in San Francisco, at a banquet on March 21 at the Railroad Club.

Mr. Lewis L. Clark, president of the American Exchange National Bank, spoke first over the Transcontinental Line, which was opened by Mr. Casler, after the address by Mr. Schmidt. Mr. Clark talked with Mr. F. B. Anderson, president of the Bank of California, and with Mr. D. A. Moulton, vice-president of the Corn Exchange Bank in Chicago. Mrs. Clark also talked with Mr. Anderson, and greetings were exchanged between Mr. Anderson and Mr. Moulton while New York listened.

After a solo by Mr. I. Ketcham in New York and a victrola selection from San Francisco, Mr. Clark demonstrated the practical usefulness of the Line, by ordering in Chicago, and in San Francisco, American beauty roses to be sent to the wives of those who participated in the program at those cities. Following this rather novel feature of the demonstration, other conversations were held between Mr. W. H. Bennett, vice-president American Exchange National Bank, and Mr. Frank D. King, cashier of the Wells Fargo Bank in San Francisco; Mr. George C. Haigh and Mr. W. R. Pentz; Mr. Arthur Reynolds in Chicago and Mr. James K. Lynch, president American Bankers' Association, in San Francisco.

President Clark expressed the appreciation of the New York Association in these words:

"We owe a debt of thanks to the New York Telephone Company for the wonderful opportunity they have given us, through their representatives, to speak with our friends in San Francisco and Chicago to-night. I am speaking for one and all and speaking it heartily. It is an occasion which we shall all remember for a long time. We are indeed proud to have listened to the transmission of the voice over this great continent of ours and it is really a triumph of science. Mr. Casler and Mr. Schmidt receive our heartfelt thanks."

In addition to this acknowledgement from the gathering as a whole, personal expressions of appreciation were made by H. S. McClure, A. K. de Guiscard, O. H. Cheney, J. T. Terry, A. B. Westervelt, F. R. Marsters, E. A. Bennett, J. A. Smith, F. C. Briswell and many others.

The splendid work of the installation forces under Foremen Aaronson and Youngbauer in completing the work on time when the room was not available until after four o'clock, deserves especial mention. In spite of the pressure of time and a number of other difficulties which were encountered, the job was a splendid one and was completed on the minute.

Newark Y. W. C. A.

THE fiftieth anniversary of the Young Women's Christian Association was celebrated in Newark on March 22 by a Transcontinental Demonstration under the auspices of the local Y. W. C. A. and the Contemporary Club.

About 320 ladies comprised the audience, who gathered at Sayre Hall and heard Mr. Leimbach and Mr. Wollmuth, local commercial manager of Newark, explain and demonstrate the wonders of the Transcontinental Line.

At San Francisco a number of prominent representatives of the Y. W. C. A. and Women's Club had gathered for the joint celebration of the fiftieth anniversary. Mrs. Richard C. Jenkinson, president of the Newark Y. W. C. A., talked with Mrs. Thurston, president of the San Francisco Y. W. C. A. Miss Helen Davis, field executive, national board, and Mrs. John S. Merrill, chairman of the Panama-Pacific Exposition work, exchanged greetings. Conversations were also held between Mrs. Thomas Gladding, secretary of the national board, and Mrs. Lawrence Draper, president of the Pacific Coast Field Y. W. C. A.; Mrs. C. W. Stockton, president of the N. J. State Federation of Wommen's Clubs, and Mrs. Black, of San Francisco; between Mrs. G. W. B. Cushing, president N. J. Consumers' League, and Dr. Caroline C. Coffin, president Housewives' League of California; Miss Elizabeth W. Clark, general secretary Y. W. C. A., Newark, and Mrs. Evelyn Kech, general secretary Y. W. C. A., San Francisco.

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Mrs. D. Frederick Burnett, of Newark, sang "Roses in June" over the wire and in reply, from San Francisco, Miss Helen Colburn Heath sang "The Year's at the Spring." The Newark Y. W. C. A. Bible class of 100 young women also sang over the Line.

The usual features of victrola selections, the roar of the Pacific and "The Star-Spangled Banner" ended the demonstration, and the long and loud applause bespoke the appreciation of the audience, which was formally expressed in the following resolutions forwarded to Mr. Wollmuth some days later:

The Young Women's Christian Association of Newark, New Jersey

Greeting

WHEREAS: Through the courtesy of the New York Telephone Company a privilege of an exceptional character was conferred upon the women of Newark in the use of the Transcontinental service between Newark and San Francisco; and

WHEREAS: Several hundred representative women availed themselves of the privilege of listening to greetings of Mrs. R. C. Jenkinson, Miss Helen Davis, Mrs. Thomas Gladding, Mrs. C. W. Stockton, Mrs. G. W. B. Cushing, Miss Elizabeth Clark, on the evening of March twenty-second; and

WHEREAS: The New York Telephone Company in its provisions for the welfare of women employees and in its fund for their support in case of sickness, disability or retirement has by its adherence to the principles and ideals of the Young Women's Christian Association won a deserved approbation,

BE IT THEREFORE RESOLVED: That the Young Women's Christian Association express to the New York Telephone Company its appreciation and commendation of the public-spirited policies and practices it maintains and of the able and courteous manner in which it provides a universal, dependable, and progressive service; further

RESOLVED: That suitable notice of this expression of appreciation be forwarded to the New York Telephone Company, and that proper record of this resolution be placed in the archives of the Young Women's Christian Association of the City of Newark.

(Signed)

MRS. RICHARD C. JENKINSON, *President.*
MRS. THEODORE E. HEYDEN, *Chairman.*
MRS. CHARLES E. TORREY, *Secretary.*

Oberlin Alumni

AT the Aldine Club, 200 Fifth avenue, 250 alumni of Oberlin College met 200 Oberlin graduates in Los Angeles over the Transcontinental Line, at the annual banquet of the Oberlin Alumni Association of New York, on March 25.

Mr. N. C. Kingsbury delivered an address on "The Development of a System," after which came the motion pictures and Mr. Schmidt's talk on "The Triumph of Science."

The demonstration was to begin at nine o'clock, but the officers of the United States Signal Corps were using the Line, so connection was established with Oberlin, O., and President King was greeted by Mr. L. T. Warner, '65. President King gave a short talk to the alumni in New York and their enthusiasm at hearing the voice of their president was extreme.

When Dr. King had said "good night" the Signal Corps were still using the Transcontinental circuit, so Mr. Kingsbury explained that the demonstration would have to be delayed until they were through. During the interval Senator Burton spoke on the "Oberlin" of his time.

Mr. Kingsbury opened the Line with a roll call of the wire chiefs along the southern route, through St. Louis and Kansas City instead of Chicago and Omaha.

Greetings were exchanged between Mr. L. T. Warner, '65, of New York, and Mr. H. F. Clark, '68, of Los Angeles; Mr. W. M. Bennett, '98, and Mr. Cedric E. Johnson, '90; Mr. Kingsbury and Mr. Johnson; Mr. Warner and Mrs. Nelle F. Burke; Mr. J. M. Siddall, '98, and Mr. J. M. Burke, '97. Mr. F. W. Smith, '09, sang the Oberlin song from Los Angeles, and the usual musical features and roar of the Pacific were all received with enthusiasm.

Staten Island Chamber of Commerce

ST. GEORGE, Staten Island, was connected with San Francisco by telephone at the annual banquet of the Staten Island Chamber of Commerce held at Hugot's Hotel, on March 27.

About seventy-five persons were present, among them Hon. J. Styn Parvé, consul-general for The Netherlands at New York; Hon. Frank L. Dowling, president of the Board of Aldermen, New York City; Hon. Calvin D. Van Name, president Borough of Richmond.

Mr. Leimbach spoke on "The Triumph of Science," giving the usual motion pictures. Mr. G. J. Hafstrom, local commercial manager, Staten Island, conducted the Transcontinental program.

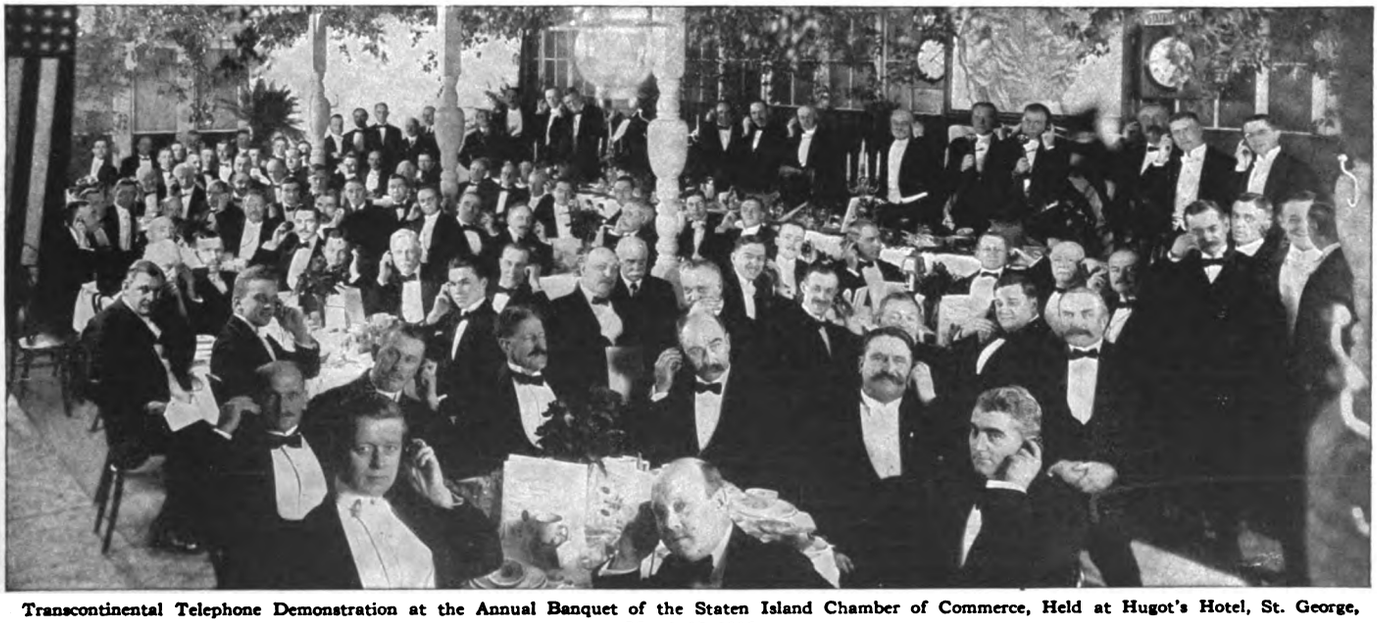
President Louis L. Tribus, of the Staten Island Chamber of Commerce, talked with Mr. M. J. Prendergast, member of the State Legislature of California; Mr. J. Styn Parvé with Mr. I. A. Schurmann, vice-consul for The Netherlands at San Francisco; Hon. Frank Dowling with Mr. E. P. Rainey; Hon. Alvert C. Fach, district attorney, Richmond County, with Hon. Edward Cuhna, assistant district attorney, San Francisco; Mr. Cornelius J. Kolff, secretary Staten Island Chamber of Commerce, with Mr. Bates, A. T. & T. Co. Mr. Van Name talked with his daughter, Miss Hazel Van Name, who was at the Hotel Del Monte, Del Monte, Cal. Mr. Arthur G. Foley sang a tenor solo from Staten Island, and Mr. Don Willoughby, formerly of Staten Island, now in San Francisco, responded with "I Love You, California," which was not interpreted, however, as any disloyalty to Staten Island.

As Mr. Hafstrom replaced his receiver on the hook, a round of hearty applause expressed the enthusiastic appreciation of the audience. Mr. Tribus thanked the Telephone Company and its representative, and presented Mr. Hafstrom with a framed copy of the program. Mr. Hafstrom acknowledged it in a graceful speech, pointing out the great measure in which the interest and coöperation of the public have contributed to the development of the telephone industry in the United States.

Mr. Van Name, who gave an address on Staten Island affairs, digressed to thank Mr. Hafstrom and the Telephone Company for the privilege of talking with his daughter across the continent. He averred that he would continue to talk about the event the rest of his life, and he was certain that his daughter would do the same.

Nebraska Telephone Association

ONE of the events at the convention of the Nebraska Telephone Association held in Lincoln, Neb., recently, was a demonstration of the Transcontinental Line, part of the program



Transcontinental Telephone Demonstration at the Annual Banquet of the Staten Island Chamber of Commerce, Held at Hugot's Hotel, St. George, March 27, 1916

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at a banquet of about four hundred conventioners.

Among the distinguished guests at the dinner were: Mr. C. J. Garlow, president Nebraska Independent Telephone Association; Col. C. J. Bills, treasurer Lincoln Tel. & Tel. Co.; Mr. Seth W. Eddy, secretary Lincoln Tel. & Tel. Co.; Mr. L. E. Hurtz, general manager Lincoln Tel. & Tel. Co.; Mr. W. L. Giblin, secretary Independent Telephone Association of America, and the Hon. John H. Morehead, Governor of Nebraska.

Mr. R. W. Hicks of the A. T. & T. Co. spoke on "The Triumph of Science," and showed moving pictures of the building of the Line. Mr. L. B. Wilson, commercial superintendent Nebraska Tel. & Tel. Co., then opened the Line, and Mr. Kingsbury from New York called the roll of wire chiefs and talked with Mr. L. E. Hurtz, general manager of the Lincoln Tel. & Tel. Co., Mrs. Woods, wife of the president of the company, Col. C. J. Bills, Mr. Warren Pratt of the Kearney Telephone Company, and Governor Morehead.

The New York end of the Line was then taken by Mr. Casler, who made a short address to the audience at Lincoln on the marvelous development of the telephone and its readiness in case of any national crisis to connect 70,000 cities and towns of the United States. "Toreador" on the victrola was then transmitted from New York.

Conversations were carried on between: Mr. J. C. Howell, general manager Pacific Tel. & Tel. Co.; Mr. Hurtz and Mr. Garlow at Lincoln; Mr. F. H. Crosby, president Northwestern Long Distance Telephone Co., at San Francisco, and Mr. Garlow, Mr. I. E. Madison, commercial superintendent Lincoln Tel. & Tel. Co., and Mr. Giblin in Lincoln; Mr. Warren Manley, district secretary United States Chamber of Commerce, San Francisco, and Mr. F. H. Richards, president Lincoln Commercial Club, Mr. Reid and Mr. Bushnell at Lincoln; Mr. Russell, auditor of the Lincoln Tel. & Tel. Co. at Lincoln, and Mr. H. G. Bates; Mr. Hicks and Mr. Bates.

Although the audience in Lincoln was at no time aware that the speakers from New York were not themselves in the same room, the interesting fact about this demonstration is that Mr. Kingsbury spoke from the Hotel Astor, Mr. Casler from his home in Ridgewood, and the victrola selection was played from the Walker-Lispenard Building. Mr. Kingsbury was attending a theater party and at the appointed time crossed to the Hotel Astor, where in a private room a subscriber's loop and standard station equipment had been installed. Mr. Kingsbury lifted the receiver and began the program by calling the roll of wire chiefs. A private line circuit from the test station in the Walker-Lispenard Building was connected with a standard subscriber's station equipment at Mr. Casler's home. He was therefore able to hear the transcontinental conversations and come in at the right time to preside over the Eastern terminus of the Line when Mr. Kingsbury had said good night.

Smith College Club

THE unifying power of the Transcontinental Telephone Line was exemplified before about 750 guests and alumnæ of Smith College at the twenty-first annual luncheon of the Smith College Club of New York at the Hotel Biltmore, on April 1, when several Smith graduates in San Francisco were made virtually a part of the meeting in New York by the long telephone line.

At the very outset the audience gained a vivid conception of the great distance traversed by the voice, and the vast sections of the country which the Transcontinental Line brings together, by the roll call of wire chiefs and their remarks on the various conditions of temperature and weather in New York, Pittsburgh, Chicago, Omaha, Denver, Salt Lake City, Winnemucca and San Francisco. When Mr. Casler, who presided over the Line, had completed the journey across the continent, demonstrating, as he said, something of the telephone way of preparedness and coöperation, and had exchanged greetings with Mr. Bates in San Francisco, President Burton, of Smith College, spoke with President Wheeler, of the University of California.

Mrs. Wm. V. Schevill, president of the Smith College Club of New York, talked with Miss Mary E. Wilson, president of the San Francisco Smith College Club, and this conversation proved to be a veritable reunion. Miss Wilson asked how many of her own class were present in New York, and Mrs. Schevill replied with their names, so that Miss Wilson could send personal messages to them, as she did. The hundreds of alumnæ listening on the Line were enthusiastic in their appreciation of the potentialities of the Line which this renewal of old associations suggested.

Mr. Mark Sullivan, editor of *Collier's Weekly*, exchanged greetings with Mr. Freemont Older, editor of the San Francisco *Bulletin*, and Mr. Raymond B. Fosdick, former commissioner of accounts of New York City, spoke with Mr. Joseph Murphy, secretary to the San Francisco chief of police. The audience, led by the Glee Club of New York alumnæ, sang "Fair Smith" to their colleagues across the continent, and victrola selections were transmitted from San Francisco.

Mrs. George B. Ford, president of the Women's University Club of New York, talked with Mrs. Edwin Newhall, Jr., in San Francisco. Connection was also established with Berkeley, Cal., enabling Mrs. Schevill to talk with her brother, Prof. Rudolph Schevill, who was somewhat overpowered at hearing his sister's voice asking after the children, as if she were no farther away than the next town!

After listening to the roar of the Pacific and "The Star-Spangled Banner" over the wire, they heard the long 3000-mile circuit grow shorter again, as each wire chief gave the name of his city and said good afternoon, gradually bringing to an end a particularly successful journey of discovery and exploration.

Before the opening of the Line addresses were made by Mrs. Schevill, by Mr. Fosdick on some problems of democracy in America, and by Mr. Mark Sullivan on the "National Newspaper." In this country a national newspaper is impossible, said Mr. Sullivan, for, "although our telephone friends" have given us quick communication to all parts of the country, the newspapers cannot be circulated with the speed of a telephone message. The mere size of the country precludes the possibility of a national paper. Mr. Schmidt, who followed Mr. Sullivan, showed effectively that the size of the country is no deterrent to telephone efficiency, in the story of the Transcontinental Line and the motion pictures which accompanied it, evoking the keenest interest of the audience.

New Rochelle Association

AT the third annual banquet of the New Rochelle Association, at the Wykagyl Country Club, New Rochelle, on April 4, a transcontinental demonstration was enjoyed by the 200 members and guests.

Mr. Leimbach delivered the talk on "The Triumph of Science" and Mr. W. A. Bryant, local commercial manager at New Rochelle, acted as master of ceremonies. Mr. Wm. B. Gray, president of the Association, talked over the long line with Mr. M. J. King, of the San Francisco Chamber of Commerce; Mayor Edward Stetson Grifling, New Rochelle, with Mr. Edward Rainey, secretary to Mayor Rolph; Mr. W. D. Head, principal, New Rochelle High School, with Mr. Alfred Roncovier, superintendent of schools, San Francisco; Mr. Wm. Judson Clark with Mr. Seward B. McNear, vice-president San Francisco Chamber of Commerce; Mr. A. L. Anderson with Mr. Warren Manly, representative United States Chamber of Commerce, San Francisco; Mr. Deaby with Mr. Steach; Mr. Chas. Young and Mr. Whyte with Mr. Bates. A solo was sung by Mr. Chas. Jarvis and acknowledged from San Francisco by a victrola selection. Mr. Jere Milleman, of New Rochelle, talked with Mr. George McLean in Denver, and Mr. Bryant exchanged greetings with his brother, Judge Bryant, in Omaha. The roar of the Pacific, "The Star-Spangled Banner" and the roll call of wire chiefs ended the demonstration, which was acknowledged by Mr. Wm. B. Gray, president of the New Rochelle Association. Dr. Stevens, Episcopal Chaplain of the New Rochelle Yacht Club, who spoke on "The New Rochelle of the Future," spoke of the evening's program in these words: "This has been a wonderful evening to me. We have all heard of the Transcontinental Telephone Line. But to realize it we must have it brought home to us as it was to-night, when we heard with our own ears voices of those at the distant coast and were enabled to realize their joys and sorrows; I had a great-aunt who was hung for witchcraft in Salem, Mass. I am sure were this in her day and we had tried to talk across the continent from Salem we certainly would have been accused of witchcraft. It certainly was a very charming entertainment and an educational treat and I can hardly realize it even now."

Flower Show

IN the Red Cross Tea Garden at the International Flower Show, on April 5, three demonstrations of transcontinental telephony were given under the auspices of the Vacation War Relief Committee and the American Fund for French Wounded.

The programs succeeded each other throughout the evening, one being given at 7.40, one at 8.40 and the last at 9.40. In each case Mr. Carroll gave the address on "The Triumph of Science," and Mr. Schmidt conducted the demonstration over the wire. After the roll call of wire chiefs, news items were read from San Francisco, and the rest of the demonstration included the usual features.

Many of the audience came personally and expressed their keen appreciation, and Miss Anne Morgan, thanking Mr. Schmidt for the Telephone Company's contribution to the success of the day's efforts, said: "The achievement of the telephone is truly most marvelous."

The folder posted about the Flower Show, directing people "upstairs" on the day of the Vacation War Relief Committee, gave this invitation:

"This evening, from 7–11 o'clock at intervals,
WONDER OF THE AGE!
Come and hear San Francisco over the wire! Moving Pictures of the Beautiful West. Then the New York Telephone Company connects you with what you are seeing. Be one of the lucky ones."

Brooklyn Club

FREQUENT evidences of enjoyment and interest were shown by 195 ladies and gentlemen during the demonstration of the Transcontinental Line at the annual dinner of the Brooklyn Club, on April 7.

The Brooklyn Club is one of the oldest and most exclusive in Brooklyn, but so great was the interest and anticipation aroused by the telephone demonstration that their strict custom of hold-

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Transcontinental Telephone Demonstration at the Twelfth Annual Dinner of the New York Alumni of the University of Kansas, Held at the Hotel Marie Antoinette, New York, April 8, 1916

ing only "stag" affairs in their club-rooms was broken, after half a century of rigid observance.

Mr. F. W. Conn, president of the club, welcomed the guests and introduced Mr. Schmidt, who began the program with the usual pictures and lecture on "The Triumph of Science." Mr. Casler then opened the Line, and the entire audience sang one verse of "America." Mr. Lewis L. Pounds, president of the Borough of Brooklyn, Col. Timothy L. Williams, president of the Brooklyn Rapid Transit System, Mr. H. M. Crist, managing editor, *Brooklyn Daily Eagle*, Mr. and Mrs. Robert Gair and Miss Elizabeth Gair, Mrs. Herbert Ketcham conversed over the Line with Hon. Edward Rainey, Mr. Jesse W. Lilienthal, president of the United Railways of San Francisco, Mr. Wm. F. Marshall, sales agent, American Can Company, Mr. J. H. Green and Mrs. H. G. Bates in San Francisco. Mrs. T. Foster Why, of Brooklyn, sang over the Line, and, in response to the "Star-Spangled Banner," the end of the Transcontinental program, the whole gathering united in singing "Auld Lang Syne."

The demonstration was a complete success and the interest and appreciation of various prominent citizens of Brooklyn was expressed in person with a number of complimentary remarks on the liberal policy of the Company in providing such an instructive and entertaining evening.

Kansas University Alumni

THE New York Alumni of the University of Kansas dined at the Marie Antoinette on April 8, when they were connected by the Transcontinental Telephone Line with Lawrence, Kan., and San Francisco. The gathering in New York, including guests, numbered about one hundred, while in Lawrence there were about five hundred students, faculty and alumni, and in San Francisco thirty-five alumni.

Mr. E. C. Alder, president of the Alumni Association, and superintendent of Adelphi Academy, Brooklyn, presided. Mr. Schmidt gave the address on "The Triumph of Science," and Mr. Casler, with a few words on "Coöperation and Preparedness," opened the Line.

Greetings were exchanged between: Mr. Alder, Prof. W. H. Carruth in San Francisco and Chancellor Frank Strong in Lawrence; Mr. H. R. Linville, Mr. Dunn in San Francisco; Mrs. Gertrude Hill Springer, Miss May Gardner in Lawrence and Miss Helen Sutliffe in San Francisco; Mr. Lucius Sayer, Mr. Oakley in San Francisco and Mr. Sayer's father, Professor Sayer, in Lawrence; Mr. E. F. Burnett and Miss Carrie Watson in Lawrence; Miss Watson in Lawrence with Mr. Floyd Barnett in San Francisco; Mr. Cockroft in Lawrence and Mr. Burnett in New York; Mr. Adler and his mother and father in Lawrence; Mr. N. C. Benson and his sister, Mrs. Dews, in Lawrence.

Other interesting features of this demonstration were a five-minute address by Chancellor Strong from Lawrence to the three audiences, the greetings of a Piute Indian chief from Winnemucca, a solo by Mr. Ben Brune from New York, and a selection by the Kansas University Glee Club from Lawrence. President Alder read a resolution adopted by the New York Association to the Chancellor and the three audiences, which was telegraphed to Governor Capper of Kansas, recommending more liberal appropriations by the Legislature for educational purposes at Kansas University. The Kansas University yell was given in turn from New York and from San Francisco, and three verses of the Kansas song, "The Crimson and the Blue," were sung in rapid succession across the continent—the first by the New York audience, the second by the Lawrence and the third by the San Francisco.

A New Wrinkle

Mark Twain once wrote what he considered a parody on the uses to which the new-fangled toy called the telephone might be put and made his hero meet a girl and court her by long-distance phone. Courting by telephone has become common since then, but marriage by the same method is something new. However, it has been done, and now that the ice is broken it may be utilized to the resulting benefit of the telephone companies.

A couple out in Wyoming were all ready to be made man and wife when they learned that, owing to the immense snowdrifts, the clergyman who was to perform the ceremony could not arrive. It meant postponing the ceremony until spring, and that was not to be thought of.

The minister at Pinedale, forty-five miles away, was called up and asked if he would marry the couple by telephone. Being assured that the license was procured and the witnesses were on hand, he told the couple to join hands, and then began: "Dearly Beloved, we are gathered together here in the sight of God and in the presence of these witnesses," and so on through to the finale, "I pronounce you man and wife." He could not exercise his time-honored function of kissing the bride, but he heard the groom perform that rite so enthusiastically that it was audible over forty-five miles of wire. The telephone tolls were 36 cents, but the minister will wait until spring for his fee.—*Schenectady Union Star.*

The Rewards of Science

"The best rewards of the study of science, whether it be for a life work or for its educational value, come in its character building," says Dr. Alexander Graham Bell, in the January issue of the *American Boy Magazine.*

"Science is exact knowledge. The scientist searches for exact knowledge. No one can devote any part of his time to a search for or a study of Truth and not reap a reward in the strengthening and broadening of his character.

"And those who search for Truth reap not only a mental reward but a moral one, for the effect upon the mind continues through all that which we call ourselves. The young man who studies scientific things from the love of them, strengthens his moral fiber. One cannot live with Truth and not be truthful.

"My father once asked my brother Melville and myself to try to make a speaking machine. I don't suppose he thought we could produce anything of value, in itself. But he knew we could not experiment and manufacture anything which even tried to speak, without learning something of the voice, and the throat and the mouth—all that wonderful mechanism of sound production in which he was so interested.

"So my brother and I went to work. We divided the task—he was to make the lungs and the vocal chords—I was to make the mouth and the tongue. He made a bellows for the lungs and a very good vocal apparatus out of rubber. I procured a skull, and molded a tongue with rubber stuffed with cotton wool, and supplied the soft parts of the throat from the same material. Then I arranged joints, so the jaw and the tongue could move. It was a great day for us when we fitted the two parts of the device together. Did it speak? It squeaked and squawked a good deal, but it made a very passable imitation of 'mam-ma—mam-ma," like that. It sounded very much like a baby. My father wanted us to go on and try to get other sounds, but we were so interested in what we had done we wanted to try it out. So we proceeded to use it, to make some people think there was a baby in the house, and when we made it cry, 'mam-ma,' and heard doors opening and people coming, we were quite happy. What has become of it? Well, that was across the ocean, in Scotland, but I believe the mouth and tongue part that I made is in Georgetown somewhere; I saw it not long ago."—*Evening Post.* (*N. Y.*)

In London

AMERICAN (*answering 'phone*)—Hello!

ENGLISHMAN (*other end of line*)—Ah you thah?

AMERICAN—Yes, old chap; but how the deuce did you guess it?"—*Minnesota Minnehaha.*

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Telephone Club and Other Doings

Night Insidemen

ON the evening of March 11, the Night Insidemen had a basketball game with an all-star team, which was won by the latter. The game was followed by dancing and singing.

Indoor Golf

THE last indoor golf putting contest of the season was held at the Telephone Club on Monday night, March 20. The play was over a new and very interesting course and was thoroughly enjoyed by all.

The following is a list of the prizes and prize-winners in the different classes:

Winner	*Class*	*Prize*
Fenn, H. B.	Low Qualifying Score	Driver and brassie
Fuller, F. H.	Qualifying Class "A"	Sweater
Garrabrant, M. C.	Match Class "A"	Caddy bag
Wentz, J. G.	Qualifying Class "B"	Wooden cleek
Hamilton, C. R.	Match Class "B"	Golf shoes
Morford, C. A.	Qualifying Class "C"	Putter
Skelton, E. W.	Match Class "C"	Leather cigarette case
Comiskie, G.	Qualifying Class "D"	Tobacco pouch
Congdon, F. E.	Match Class "D"	Ash receivers

Accounting Night

AT five o'clock on Tuesday, March 21, the men of the Revenue Accounting offices put aside the ledger cards, locked the safes, and started for the Telephone Club. At precisely the same moment the disbursement division force called a halt on the general book and voucher work and journeyed in the same direction.

The Mecca of the pilgrims was the smoker and entertainment of the Accounting Department, and the dinner menu at the club had evidently been widely advertised, for 135 sat down at the tables.

At eight o'clock those present adjourned to the gymnasium, where Chairman A. W. Deas, division auditor of receipts, Long Island, revealed an excellent entertainment. The program was opened with a selection by an orchestra of twelve pieces, under the able leadership of Mr. W. E. Coyle. Mr. P. O. Coffin, auditor, then introduced Mr. J. S. Wiley, general auditor of the Eastern Group of Companies, who addressed his co-workers informally. Mr. Wiley commented on the spirit of coöperation evinced by the members of the department, the progress made in establishing the organization on an efficient basis during the last three years, the ability of the force to meet unusual demands, through "Preparedness," and pointed out that pride in the organization and an interest in one's work were necessary attributes to success. He also said, "I am sorry that it was not possible to have the women of the department here this evening, that I might extend to them my appreciation of their efforts, for the girls do good work too."

The following program was then rendered:

1. Baritone solos.....CLARENCE PORTER
   (a) "A Perfect Day"
   (b) "Auf Wiedersehen"
2. Athletic Exhibition
   WILLIAM ELWOOD and THEODORE KURZ
3. Instrumental Selections..ACCOUNTING FOUR
   Yates, E. Rogers, W. Rogers, and States
   (a) "The Devil"
   (b) "Are You from Dixie?"
4. Athletic Exhibition
   Messrs. LEAHY and HENDERSON
5. Selection.....
   "Lustspiel"
   ACCOUNTING DEPARTMENT ORCHESTRA
6. Athletic Exhibition
   ADDISON WARE and J. A. KELLY
7. Tenor Solos.....WILLIAM TRACEY
   (a) "Somewhere a Voice Is Calling"
   (b) "Where My Caravan Has Rested"
8. Novelty Song.....E. MALLOY
   "At the Fountain of Youth"
9. Piano Solo.....R. QUEISSER
   "Gems from the Operas"
10. Athletic Exhibition
    HARVEY WARE and ARTHUR ROSE
11. Selection.....
    "Barcarolle"
    ACCOUNTING DEPARTMENT ORCHESTRA
12. Athletic Exhibition
    MORTIMER WILLIAMS and HARRY HAVILAND

The Committee of Arrangements consisted of Mr. A. W. Deas, chairman, and Messrs. Byrne, McEwen, Sanchez, Stephenson, Freeland, Daly, Willert, and Poole.

Installation Night

INSTALLATION Night, Manhattan & Bronx, at the Telephone Club, March 23, 1916, will go down in history as the night on which all other efforts of this Department at entertainment and reception were eclipsed.

The capacity of the grillroom was overtaxed, two sittings being necessary, in addition to which tables were set in the billiard room to care for the overflow.

Preceding the regular performance, the early comers were entertained by local talent in the assembly room.

Everything went off like clockwork. The entertainment scheduled to start at eight-ten did so on the second, as did the ending which was scheduled for nine-thirty.

The floor of the gymnasium was filled by an enthusiastic and appreciative audience who witnessed what was pronounced by many who had attended previous entertainments as far surpassing any effort of a similar nature that had ever been attempted heretofore.

The stage for this occasion was embellished with new and magnificent fittings, furnishings, and electrical equipment, which surprised and delighted the entire assemblage.

The entertainment over, the floor of the gymnasium was immediately prepared for dancing, as an auxiliary to the assembly room.

Special arrangements were made in the assembly room for the removal of the ponderous furniture and substituting in its place dance-room chairs, arranged in box formation, so as to furnish as much floor space for dancing as possible.

Two orchestras furnished the music for dancing, one on the assembly and one on the gymnasium floors.

The order of dance was arranged under a time schedule, seven minutes dance and three minutes intermission, and dances on the two floors started simultaneously.

The entire affair was pronounced an unqualified success, and all who attended, upon their departure, expressed their appreciation at the effort made to entertain them.

Orchard Local Office

A DINNER celebrating the fifth anniversary of the opening of the Orchard Commercial Office was held at the Telphone Club on Thursday evening, March 30, 1916. The attendance was restricted to present and former male employees of the office. Twenty persons sat down to a turkey dinner, served in the usual "Telephone Club" style.

Local Commercial Manager G. Collins presided over the festivities, and the guests of the evening were District Commercial Manager Volkmar and Local Commercial Manager Pentz.

After the dinner the party adjourned to the bowling alley and billiard room, where some exceptionally high scores were made.

The affair was a complete success from every standpoint and many requests have been received that it be made an annual event.

The dinner was in charge of the following committee: W. T. Maier, H. G. Muller, and D. J. O'Kane.

As Heard in Butte

WEARY MIKE (*at the telephone*)—Say, kin I talk to Mr. McAfee?

CENTRAL—What is his number, please?

WEARY MIKE—Wot! Is he pinched again?—*Mountain States Monitor.*

The Telephone—Its Use—Its Service

A TELEPHONE is like a can of gasoline, a motorcycle, or a wheelbarrow on a dark night. That is to say, a very useful and satisfactory thing, if approached circumspectly and handled intelligently.

But because there are many people who have not learned how to properly use this greatest of all inventions there is still friction to be overcome.

It goes without saying that there will always be the fellow who strikes a match on the rim of the gasoline can, just as there will be the office man who "bawls out" the girl at the switchboard.

Now the gasoline kicks back in a purely extemporaneous but instant manner, and the match striker, who is really a dangerous man, is removed entirely from an environment to which he is a menace.

The telephone, unfortunately, cannot shoot a few hundred volts into the carcass of the "grouch." The instrument is scientifically harmless. It has to be, in order to properly serve the big majority of gentle folks who daily use it.

So the "grouch" talks roughly to his company's patrons, gives slurring answers to polite inquirers, drives away business and imparts to every person with whom he talks on the wire a series of gloomy shivers.

A fool or a misanthrope with his lips at the transmitter may do more damage to any business than his labors in other channels can produce.

He is a millstone around his company's neck, and if there are enough of his sort, the company will drown in a sea of unpopularity.

Watch every employee in your office. Start on them when they are office boys and train them to look up to the telephone as one of the best "business getters" in the shop if handled right. Teach them to smile while they are speaking. Admonish them to be polite to everybody all the time.

If you have a fellow who won't learn, for goodness' sake don't let him fool with a high-class electrical instrument like a telephone. Let him go down to the power house and connect with a 200-horsepower dynamo.—*From "The Right Way," courtesy Passenger Traffic Department, Central of Georgia Ry.*

Overheard in the "Antique Shop"

"This telephone table, madam, was designed for Louis V by the celebrated Carciofini. Its associations are most romantic."—*The Press.*

"Excuse Me a Moment, O Lord. There's the Phone."—*Life.*

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NEW YORK TELEPHONE COMPANY

GENERAL OFFICES, 15 DEY ST., NEW YORK

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H. F. THURBER, Vice-President
FORD HUNTINGTON, Vice-President
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Mgr. Traf. Inspection, M.-B.

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C. H. GROVER
Supervisor of Methods

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Manhattan-Bronx & Westchester

BURCH FORAKER
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Western

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Buffalo

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The Kingdom of the Subscriber

In the development of the telephone system, the subscriber is the dominant factor. His ever-growing requirements inspire invention, lead to endless scientific research, and make necessary vast improvements and extensions.

Neither brains nor money are spared to build up the telephone plant, to amplify the subscriber's power to the limit.

In the Bell System you have the most complete mechanism in the world for communication. It is animated by the broadest spirit of service, and you dominate and control it in the double capacity of the caller and the called. The telephone cannot think and talk for you, but it carries your thought where you will. It is yours to use.

Without the co-operation of the subscriber, all that has been done to perfect the system is useless and proper service cannot be given. For example, even though tens of millions were spent to build the Transcontinental Line, it is silent if the man at the other end fails to answer.

The telephone is essentially democratic; it carries the voice of the child and the grown-up with equal speed and directness. And because each subscriber is a dominant factor in the Bell System, Bell Service is the most democratic that could be provided for the American people.

It is not only the implement of the individual, but it fulfills the needs of all the people.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

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Vol. 7, No. 6 JUNE, 1916

The TELEPHONE REVIEW

U. N. BETHELL

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Mobilization of Communication, Navy Department, Washington, D. C.

May 6, 1916

REMARKS OF MR. U. N. BETHELL, SENIOR VICE-PRESIDENT AMERICAN TELEPHONE & TELEGRAPH COMPANY, TO SECRETARY DANIELS, U. S. N.

MR. SECRETARY: In behalf of those who are here to represent the Bell Telephone System, I desire to assure you that it gives us great pleasure to be here at your invitation to coöperate with you in making this test and demonstration. Though the whole of our nation-wide plant is available and ready, only a very small part of it is to be used in connection with this present plan of mobilization; the immediate purpose being only to connect the city of Washington with the various navy yards throughout the country, on the Atlantic and Pacific coasts, the Great Lakes, and the Gulf of Mexico, and with a ship at sea. By these means we shall enable you to conduct the actual business of the Department through the period which you have fixed. I should like to point out that while the headquarters for this particular test are in Washington, they might be shifted to any other important place in the country, and the test could be made from there with equal facility. It would be impossible in the period which you have fixed for this test to connect you with even a fair percentage of all the places accessible to you through the lines of our comprehensive system.

The organization of the American Telephone & Telegraph Company, and its Associated Companies, is also placed at your disposal. It may be proper to say that our national organization consists of a chief executive and general staff, at headquarters, and eight field organizations which together cover the entire United States. The lines of authority everywhere are clean-cut and certain. Each individual, wherever he may be in the organization, has but one superior officer. But the smooth and efficient working of the organization depends more perhaps upon what we may call lines of relation than upon those of strict authority. It is only by harmonious coöperation, by close and continuous team work, that our organization has been able to build up and put upon an efficient basis the system of communication which we place at your service. Most essential of all in accomplishing results is the spirit that actuates the organization. The organization charts and diagrams made for the purposes of this test show only that part of our organization which will be directly involved in making the test. It is only a small part of the whole. But if the whole were shown the vital part would not be there, for it is not possible, sir, to show by lines plotted on a chart the spirit which alone gives the organization life and power.

For some time we have been coöperating with the Navy Department in arranging for this test, and it promises to be most successful because of the splendid spirit shown by the members of your official staff whom you have delegated to give attention to this important matter. From now until Monday morning, that is until the hour fixed by the Department for the test to end, the members of our organization assigned to this duty will be under your command and subject to your orders.

You were good enough, in extending your invitation, to refer to the patriotic satisfaction which we might feel in rendering this service. As an individual citizen develops and displays what are known as traits of character, so the composite citizen, the creature of the State, the corporation, may also develop and at times display what we may call its traits of character. We trust that whatever else we may lack we shall never be found wanting in that loyalty to country and devotion to the flag which constitute true patriotism.

Our President, Mr. Vail, having found it impossible to be with us to-day, has asked me to convey to you an expression of his regrets. For myself and associates who have the good fortune to be here I wish to assure you that it has given us a very real and keen pleasure to have witnessed, in the brief preliminary test which has just taken place, the realization of your prediction, made some time ago, that as Secretary of the Navy you would be able to talk from your desk to ships at sea. It is particularly gratifying to us to have participated in this accomplishment of your hope—to have listened to the conversation, the first of its kind in history, which you have just carried on so successfully with Captain Chandler—you at your desk here in Washington and he on the bridge of the New Hampshire at sea.

And now, sir, permit me to say that we are at your service and await your commands.

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ANNUAL MEETING OF THE TELEPHONE SOCIETY

3,250 Members Were Present and Connected by Telephone With 900 Members of the

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NEW YORK, 71ST REGIMENT ARMORY, MAY 19, 1916

delphia Society, 1,200 of the Baltimore Society, and 1,000 of the San Francisco Society

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The TELEPHONE REVIEW

New York June 1916

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The TELEPHONE REVIEW

J. D. NEWMAN, Editor

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Mr. Bethell to "The Family"

THE meeting of the Telephone Society in New York Friday night, May 19, was the most remarkable affair of its kind ever held. This is not because there were 3,250 diners present in the Seventy-first Regiment armory, nor that a telephone demonstration was given in which 6,350 people heard a speaker's voice at the same time—the largest number of hearers a speaker by telephone has ever had in all the history of the world, nor because the telephone demonstration crossed the continent, and included the wireless telephone; it was not because of the distinguished speakers who addressed the audiences in New York, Philadelphia, Baltimore, and San Francisco.

This meeting was the most remarkable that has ever been held, because of the spirit which was shown. It was there in full force, permeating the very soul of every man present, and the source and inspiration of it was there too—our president, Mr. U. N. Bethell. All that he witnessed was merely a response, deep-rooted and spontaneous, to the spirit that he has infused into the New York Telephone Company in the twenty-seven years of service which he has just completed. No words can describe it.

IN addressing the members of the Telephone Societies in New York, Philadelphia, and Baltimore, Mr. Bethell spoke to all employees of the Eastern group, and indirectly to all employees of the Bell System. "For each one here," he said, "there are eight or nine at home or on the job." Of the 48,000 employees in the Eastern Group, about 5,350 were present at the meetings in the three cities, but Mr. Bethell did not forget the others, who either were kept away giving the "continuous service" that the Bell System furnishes, or were not members of the societies.

Speaking of the "subtle and irresistible charm" of "our profession" that "lifts some to heroic heights," Mr. Bethell mentioned first the operators "who in times of flood and storm have never faltered, but have done their duty faithfully and nobly." He mentioned "the men with climbers on, who, time and again, have taken their lives in their hands, and suffered all sorts of hardships to restore storm-tossed and broken lines, that the work of the world might go on." He mentioned "the men and women in all branches of the service who have never failed to rise above personal comfort and convenience, but sacrificing these have met and successfully coped with many a great emergency."

"Even in the ordinary everyday doing of the job there is a fine display of the stuff out of which circumstance makes heroes," continued Mr. Bethell, and again he mentioned "our whole magnificent operating force, which time and again has been tried and never found wanting," and all the other forces of the entire organization.

Telephone History in the Making

IT is impossible that the history of the telephone can be written until time has given the perspective by which its importance may be gauged. Not only is the telephone still in its biographical period, it is still in its infancy. The forty years of marvelous attainments in its development and use have unfolded possibilities for the future which only time will reveal, and the present is too filled with activities for the progress of even a day to be fully noted.

Looking back over the past, periods may be discerned, and in each new year there are marks distinguishing new stages, which are no sooner reached and passed than they are lost sight of in the rapid progress the Bell System is making.

For example, last year in January long distance telephony reached the stage where it was possible for the first time to talk across the continent and the waters of the Atlantic and the Pacific could mingle in a mighty roar.

In September, the world was startled by the achievement of wireless telephony.

Already the world is looking with full confidence for what will be done next by the Bell Engineers.

The public is giving its attention now to the uses that are being made of this commonplace instrument, the telephone. This is another stage which the future historian may note. It is important that the world should realize what may be done with the telephone. Unless it is utilized, it will be like the talent that was buried in the ground, but its value can be increased a hundred or a thousand fold if it is used to the limit of its possibilities.

Some of its exceptional uses have been demonstrated almost daily for nearly a year, and described in the accounts which we have printed from month to month.

When the public realizes that talking across the continent at a dinner party is not only a thrilling experience, but actual social intercourse, as personal and intimate as among guests seated at the same table, the true meaning of the telephone will begin to dawn upon it. These demonstrations that have been given do not reveal the limits of the uses of the telephone, but only the possibilities of personal intercourse, whether upon Government or private business, or for social purposes, which the telephone affords.

In making its own history, the telephone is largely making the history of the world, because it is becoming the means of universal intercourse.

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Mobilization of Forces of Communication

U. S. Navy

In Coöperation with American Telephone & Telegraph Company and Associated Companies

RAPID and reliable communication, by which time is made coincident everywhere regardless of the progress of the sun, and distance is measured by the seconds hand of the clock, is revolutionizing the activities of the world.

This is a peaceful revolution which the telephone is accomplishing, and all the forces of civilization are benefiting.

Hon. Josephus Daniels, Secretary of the Navy

There are other revolutions and other forces which make for peace, but are in themselves warlike.

Upon rapid and reliable communication in the mobilization of its defensive forces and in the exigencies of war, depends not only the safety of a nation, but its civilization.

The wire and wireless means of communication created and operated by the Bell System places the Government of the United States in the foremost position among all the nations of the world not only in the rapidity and reliability of the service available, but in its extent.

In every business, industry, and profession, and for every social and other possible purpose, the people of the United States have been quick to utilize the Bell System of communication because of its rapidity, reliability, and extent, and to Secretary Daniels belongs the credit for turning to it as a means for the national defense.

On April 11, 1916, the Honorable Josephus Daniels, Secretary of the Navy, wrote Mr. Theodore N. Vail, president of the American Telephone and Telegraph Company, as follows:

NAVY DEPARTMENT,
WASHINGTON, April 11, 1916.

The President of the American Telephone and Telegraph Company, 15 Dey Street, New York, N. Y.

SIR: The Navy Department has for some time recognized the great need and desirability of more rapid and reliable communication between the Department and its territorial Navy Yards and Stations. Particularly would this be the case in time of war, and believing that the experience and organization of the American Telephone and Telegraph Company is such that the Company could readily evolve a plan by which this great need could be met, the Department feels justified in appealing to the patriotic spirit of this Company and to definitely ask whether it is in a position to give the Department a demonstration of what could be accomplished in the way of communication, particularly in long distance telephony and telegraphy, which would bring the offices of Departments and the Navy Yards and Stations within the limits of the United States proper into that close touch which the exigencies of war might demand.

Not alone would such a mobilization show the capabilities of telegraph and telephone communication in time of public peril, but it is hoped that the experience gained would lead to a condition that would also give more rapid communication in ordinary times of peace.

In order that this mobilization of forces of communication may be complete, and recalling the close coöperation of officials of the Department in the past with officials of your Company in the development of the wireless telephone, it is confidently hoped that its use as a means of communication with a ship at sea could also be demonstrated at the same time under such conditions that might be mutually agreed upon.

It is hardly necessary to state at this time that Congress provides no funds whereby the expense of such a demonstration could be borne by the Government and thereby recognizes that whatever is done by your Company will have to be free of all expense to the Department, but it is further confidently hoped that your desire to serve the Government in its time of need can so express itself in time of peace that any financial outlay on your part will be returned in the patriotic satisfaction you would feel in knowing the part you would play in the great subject of Preparedness, and in knowing that when such a service was actually required for the National Defense, you would be amply recompensed.

Very truly yours,
JOSEPHUS DANIELS.

Mr. Vail replied on April 19, as follows:

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
NEW YORK, April 19, 1916.

Hon. Josephus Daniels, Secretary of the Navy, Washington, D. C.

DEAR SIR: We are in receipt of yours in respect to "a demonstration of what could be accomplished in the way of communication, particularly in long distance telephony and telegraphy, which would bring the offices of the Department and the Navy Yards and Stations within the limits of the United States proper into that close touch which the exigencies of war might demand."

In respect to the making of this demonstration, the history of the development of this Company we think bears out that the underlying idea was the full development of all the possibilities of an intercommunicating service as a public utility in the broadest sense of the word. First, of course, the development had to be made on sound economic lines, otherwise it could not have been done. As corollary to this policy, we would take a "patriotic satisfaction" in placing our system at the service of the Government in any time of need, and in bringing our employees engaged in the particular service in such official relation as will make available to the Government all the facilities of our system.

To these ends we will gladly furnish the demonstration desired in such way and at such times as may be arranged upon between the proper officials of the Government and of this Company

Sincerely yours,
THEO. N. VAIL, *President.*

In an instant the sound economic theory upon which the Bell System has been developed was demonstrated—One Policy, One System, Universal Service.

In another instant, the service which was the outgrowth of that policy was demonstrated in the experiments which were conducted at the direction of Secretary Daniels.

Under the ægis of liberty, untrammeled by officialdom, encouraged by the lust of achievement, aided by the unstinted support of the public that has confidence in their proven ability, and rewarded by the enjoyment of the fruits of their labors, the American Telephone and Telegraph Company and its Associated Companies have created and given to the

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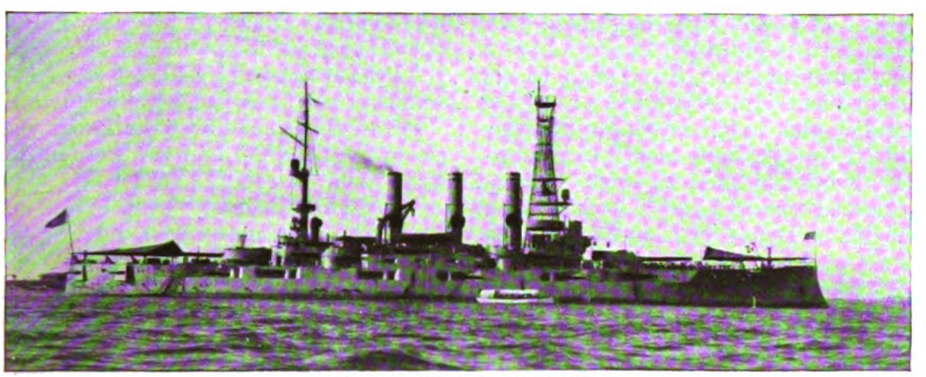
world a new science, and an organization unequaled for its efficiency, and unsurpassed in its patriotic zeal, for it embraces all the greatest experts in the world in their profession, and as a united body is prepared to serve its country at the word of command.

The Bell System was glad to furnish to the country at its own expense the demonstration desired by Secretary Daniels, and it felt amply repaid in the patriotic satisfaction of doing so.

The demonstration covered a period of forty hours, from 4 P.M. May 6 to 8 A.M. May 8. As outlined by Secretary Daniels, it consisted of bringing "the officers of the departments and the navy yards and stations within the limits of the United States proper into that close touch which the exigencies of war might demand" and "with a ship at sea."

During this period, all communications of the Navy Department were on a war basis. The conditions under which this

Secretary Daniels speaking by wire and wireless telephone to Captain Chandler on board the U. S. S. "New Hampshire" in Hampton Roads. At Secretary Daniels's left stands Mr. U. N. Bethell, and to his right, Captain W. H. G. Bullard, Chief of Bureau of Communications, U. S. N. Others in the party are: Left to right—1. J. J. Carty; 2. Bancroft Gherardi; 3. F. A. Stevenson; 4. M. H. Buehler; 5. N. C. Kingsbury; 6. F. H. Bethell.



U. S. S. "New Hampshire"

mobilization was conducted were made to represent as nearly as possible those of war. All other means of communication were suspended, and all orders and instructions of all kinds were transmitted and reports received over the lines of the Bell System, either by telephone, telegraph, or printer telegraph.

First Wireless Telephone Conversations With a Battleship at Sea

Promptly at 4 P.M. on May 6 Secretary Daniels lifted the receiver of the telephone on his desk and was connected by wire and wireless with Captain Lloyd H. Chandler, who was at his station on the bridge of the U. S. S. *New Hampshire* at Hampton Roads.

The Secretary said, "Is that you, Captain Chandler?"

"This is Captain Chandler."

"Where are you?" asked the Secretary.

"On the bridge of the U. S. S. *New Hampshire* at Hampton Roads."

The Secretary continued: "It is interesting that the first conversation with a warship should be between the Secretary and the son of a former Secretary. It is interesting, also, that the first conversation is with the *New Hampshire*, of which you are captain, and incidentally that she bears the name of the State from which you come."

"Thank you, sir," replied Captain Chandler.

After some further conversation, Secretary Daniels said to Captain Chandler: "I will be in my office in the Navy Department at ten o'clock to-morrow morning. I will ring you up then and have another conversation. I can hear you as well as if you were in Washington, Captain Chandler. It will not be long before the Secretary of the Navy will be able to sit in his office and communicate with vessels of the navy all over the world by wireless telephone. That is something the captains may not like!"

Rear Admiral Benson, Chief of Naval Operations, then stepped to Secretary Daniels's telephone and said to Captain Chandler: "This is Admiral Benson. You will get under way at ten o'clock to-morrow morning. Stand out to sea; report your position every hour by wireless telephone, and you will return in time to anchor off the mouth of the Potomac not later than Monday. On Monday afternoon the same program will be repeated in an exchange of wire-

Capt. Frank M. Bennett, commandant at Mare Island Navy Yard, at the telephone talking with Capt. Lloyd H. Chandler, U.S.N., commanding U. S. S. "New Hampshire" 50 miles at sea in the Atlantic. Lieut. Commander Sweet (Retired) at the side of Captain Bennett.

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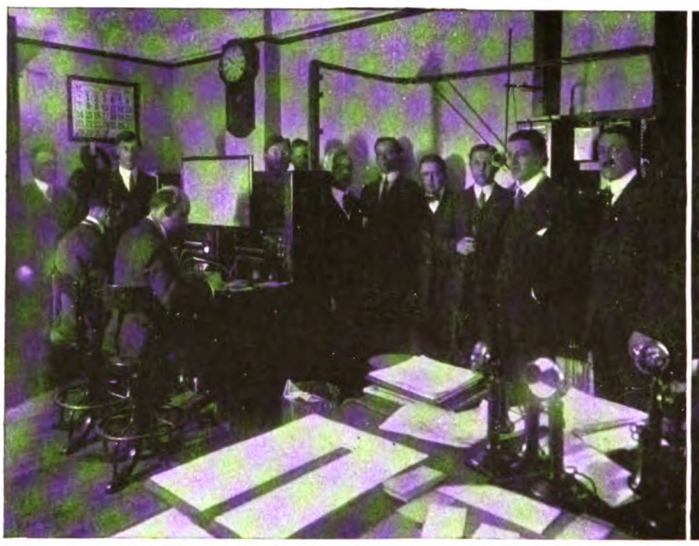


Telephone Switchboard and Communication Room

Telegraph Room

less telephone messages with you from the Naval Academy at Annapolis."

Then Rear Admiral Badger, former Commander-in-Chief of the Fleet, talked with Captain Chandler. "Hello!" said the Admiral. "That you, Chandler? Did you get your orders all right from Admiral Benson? I hope you will have a very pleasant trip outside the Capes. It is very wonderful to be able to talk with you this way. I hear your voice as plainly as if you were here."

yard in Brooklyn, and 28 seconds to get San Diego, Cal.

The speed with which the communications of the Navy Department were dispatched is indicated in the following telegram sent from San Diego to the Department in Washington: "The rapidity with which orders can be transmitted by telephone was indicated today, when instructions were received at Point Loma, Cal., in this manner from the Navy Department in Washington,

When her telephone bell rang, Mrs. Chandler said, "Hello!"

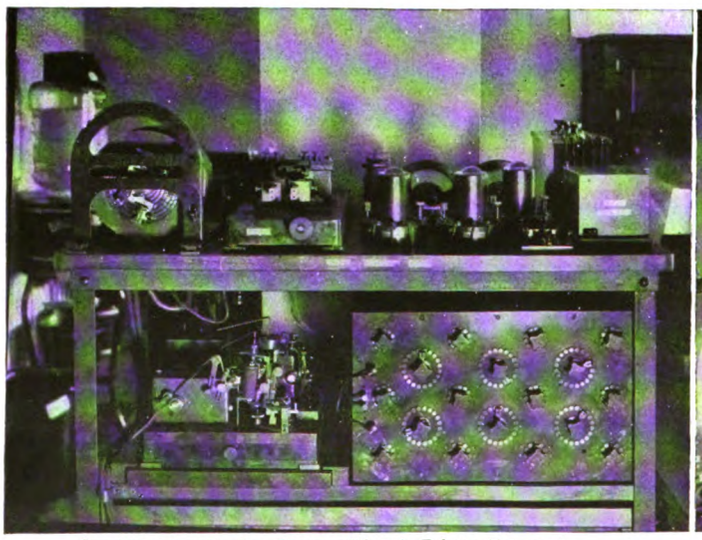
Captain Chandler, "This is Captain Chandler."

"You are out to sea?"

"Yes, I'm talking to you from the bridge of the U. S. S. *New Hampshire*."

"Isn't this splendid? I can hear you clearly. It sounds as if you were in the same room with me."

"I can hear you very well. How are you?" asked Captain Chandler.



Synchronizing Device, Western Electric Printer Telegraph

Supervising and Operating Force, Printer Telegraph Room

For nearly half an hour Captain Chandler remained at the telephone on the bridge of his battleship at Hampton Roads, talking with officers of the army and navy who used Secretary Daniels's desk telephone.

Four Minutes to "Raleigh" at Corinto

Secretary Daniels then talked with several navy yards, it taking but 45 seconds to get Pensacola, Fla., 32 seconds to get Great Lakes, Ill., north of Chicago, 27 seconds to get the New York navy

and then flashed by wireless to the cruiser *Raleigh* at Corinto, Nicaragua, within four minutes after the message had been filed at the national capital."

Fifty Miles at Sea, Capt. Chandler Makes Appointment With His Wife by Telephone

On Sunday, May 7, after making his report to the Secretary of the Navy, Captain Chandler was connected by telephone with his residence in Washington, D. C., North 2726, and talked with Mrs. Chandler.

"I'm well, and hope you are," replied his wife. "Shall I come down to the wharf on Tuesday?"

"Yes, if you will."

"All right! This talk is simply wonderful. I must say good-by."

"Good-by!" answered Captain Chandler.

Talks With Great Lakes, Ill., and Mare Island

Following this conversation, Captain Chandler talked to Lieutenant Snyder at the Great Lakes Naval Station, north

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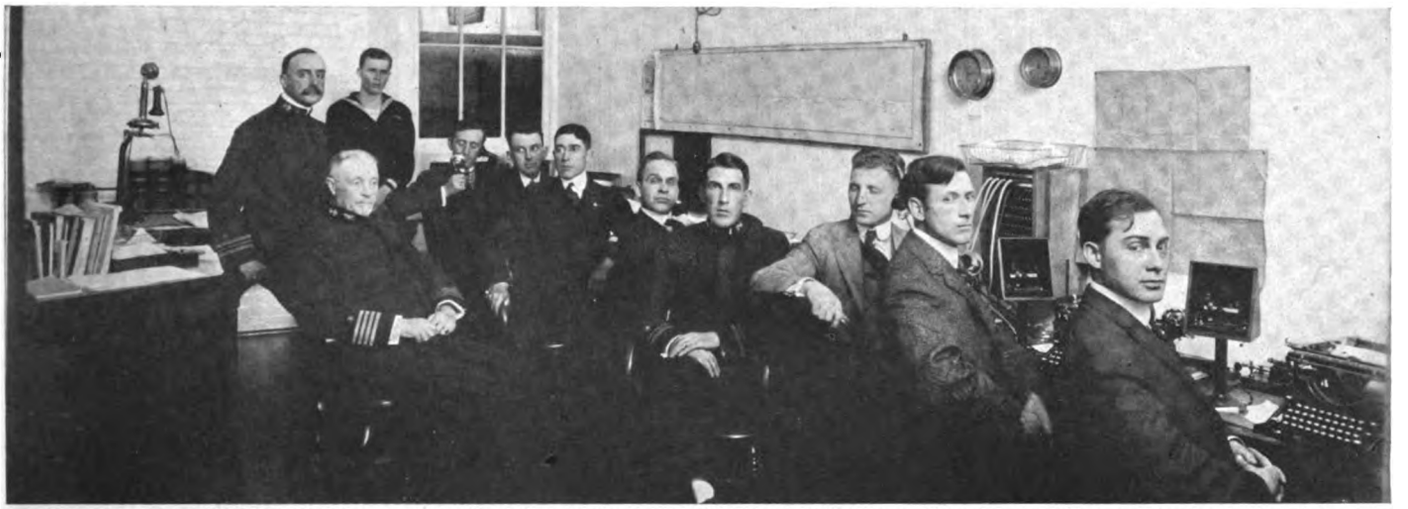

Working Force at Mare Island and Some of the Officers Participating in the Mobilization of the Navy. Capt. Frank M. Bennett Seated at Left of Picture

of Chicago, Ill., who told him that most of the officers were out playing golf.

Captain Chandler, on the bridge of the U.S.S. *New Hampshire*, was then connected by wireless and wire with Capt. Frank M. Bennett Commandant at Mare Island Navy Yard, Cal., and Lieutenant Commander Sweet (retired). The *New Hampshire* was cruising fifty miles at sea during these conversations.

Beginning the Tests

Route maps inscribed "Mobilization of Forces of Communication U. S. Navy, in Coöperation with American Tel. & Tel. Co. and Associated Companies, May 6, 7 and 8, 1916," hung in the office of the Secretary of the Navy, showing the points with which communication was being conducted.

When the tests began, on Saturday, May 6, more than seventy guests were present in the office of the Secretary of the Navy, including officers of the Government and representatives of the Bell System.

Mr. U. N. Bethell, senior vice-president American Telephone and Telegraph Company, made an address to Secretary Daniels, which is printed on the inside front cover of this magazine.

Secretary Daniels replied, thanking the Company for complying with his request and providing the demonstration. He said in part:

Unless when communication says "move," we can communicate freely with the ships and with the armies, with our industrial establishments mobilized, our ships and troops may be too late for an emergency. Your organization, Mr. Bethell, efficient and progressive, must take the first step.

I congratulate you and thank you, and I wish to say with regard to your happy allusion to the patriotism of Americans, that in times of commercial rivalry some may have thought Americans have become worshippers of the almighty dollar, but I believe that this coöperation for world-wide communication and the work of the Naval Consulting Board, aided by 36,000 engineers, is the indisputable proof that, whether Americans are acting as individuals or as corporations, their hearts respond readily and unreservedly to the call of their country. More than that: They are planning and studying and experimenting to see how they can best serve their country in ways hitherto unknown.

Secretary Daniels then introduced Mr. J. J. Carty, chief engineer American Telephone and Telegraph Company, who, in commenting upon the tests about to be made, said: "There is no navy in the world which has the power of the United States Navy to mobilize instantly its resources through such a system of communications." Referring to the officers of the United States Navy, Mr. Carty continued: "They are not excelled by any other body of men I have ever known. I have gained this high opinion of them during the two years coöperation in which the Navy and the American Telephone and Telegraph Company, by joint effort, developed the radio communication system which was demonstrated in the test opened to-day."

PASS.

NAVY ANNEX BUILDING.

Washington, May 6, 1916.

Pass Mr. U. N. Bethell, Senior Vice-President, A. T. & T. Co., into the Building, and to Room No. 450; on duty.

This pass is good for 6th and 7th May.

Lieut., U S.N.

Bureau A. T. & T. Co. Navy Dept.

Mr. Bethell "On Duty"

Secretary's Congratulations

At 5 P.M. on Sunday, May 7, the Secretary of the Navy issued this statement:

In connection with the mobilization of the telephone and telegraph lines of the Bell System, made at the request of the Navy Department, I have met a few members of the Bell organization. I know that thousands and thousands of others have coöperated in making this mobilization such a wonderful success. I congratulate them all most heartily.

JOSEPHUS DANIELS, *Secretary of the Navy.*

Secretary Daniels also sent the following telegram to Mr. Vail:

TELEGRAM

WASHINGTON, D. C., May 7, 1916.

THEO. N. VAIL,
President of the American Telephone and Telegraph Co.

I congratulate you and all of the forces of your company on the splendid success of the mobilization of the forces of communication in coöperation with the United States Navy.

JOSEPHUS DANIELS,
Secretary Navy.

Less Than 1 Per Cent. of Bell System Called Upon

Although the entire plant and personnel of the Bell System were available for the purposes of mobilization, less than 1 per cent. of each was called into service.

The following figures show the extent of the plant facilities available and those which were utilized.

	Facilities Involved in the Mobilization of the Forces of Communication, Washington, D. C. May 6, 7 & 8, 1916	Total Facilities of A. T. & T. Company Long Distance Lines Department
Miles of pole line	14,367.53	27,336.06
Miles of No. 8 gauge copper wire	38,941.84	110,169.00
Miles of No. 12 gauge copper wire	5,094.16	312,753.00
Miles of cable single length	587.43	670.84
Miles of wire in cable	9,177.93	96,298.36
Total miles of wire	53,214.00	18,505,545.00

Organization

Captain W. H. G. Bullard, Chief of the Bureau of Communications, was in direct charge representing the Navy Department, and to him reported Mr. F. A. Stevenson, general superintendent of plant of the American Telephone and

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Telegraph Co., who had assigned to him the entire staff and personnel of the Bell System, with control over all its plant and equipment during the experiment. An executive order from Mr. Vail to this effect was all that was necessary to provide the Government with all the resources of the Bell organization. Representatives of the navy, army, and other departments of the National Government were designated by Captain Bullard to coöperate with the Bell employees assigned to operate the facilities that were to be tested.

The Bell System facilities placed at the service of the Government on this occasion consisted of four types:

a Telephone service by wire,
b. Telephone service by wireless,
c. Telegraph service,
d. Long lines printer service.

Telephone Service by Wire

A switchboard was installed in the Navy Annex at Washington, D. C., connected by direct circuits with the following stations: Portsmouth, N. H.; Boston, Mass.; Newport, R. I.; New London, Conn.; Brooklyn, N. Y.; Philadelphia, Pa.; Annapolis, Md.; Washington, D. C.; Norfolk, Va.; Charleston, S. C.; Pensacola, Fla.; New Orleans, La.; Great Lakes, Ill.; Mare Island, Cal.

Naval stations at San Diego, Cal., Yerba Buena, Cal., and Bremerton, Wash., were connected by direct circuits to the San Francisco toll board.

Telephone Service by Wireless

Wireless telephone service was established between the Navy Department at Washington and the U.S.S. *New Hampshire*, off the Capes in the Southern drill ground.

Telegraph Service

Telegraph message wires of the Bell System were established connecting the naval stations with the Navy Annex at Washington. The naval stations were grouped into four systems and loop switchboards were installed at the Navy Annex, by means of which two or more of the systems could be cut together.

Long Lines Printer Service

Long lines printer service (Western Electric type of instrument) was established between the Navy Annex and the Brooklyn Navy Yard. By means of the Western Electric printer, which has a keyboard similar to a typewriter, a paper tape is perforated with dots and dashes which, by means of an electrical contrivance, are transmitted over the wires and reproduced at the distant end in the shape of typewritten words on sheets of paper.

By means of the printer telegraph eight telegraph messages were transmitted simultaneously over the same circuit; four of these messages being sent from the Brooklyn Navy Yard to Washington, and four being sent from Washington to Brooklyn.

Patriotic Satisfaction

Mr. Carty sent the following telegram to Mr. Bethell Monday morning:

TELEGRAM
WASHINGTON, D. C., May 8, 1916.

U. N. BETHELL, *Vice-President*, NEW YORK, N. Y.

Program of mobilization has just been completed at eight o'clock this morning in accordance with plans. Further communication has been maintained with all points as planned. Telephoning to battleship *New Hampshire* complete success. Captain Chandler talking with his wife at her home in Washington by wireless and the regular telephone system, also talking by wireless and wire with Great Lakes Naval Station and Mare Island, Cal. Secretary of the Navy, Admiral Benson, Chief of Operations, Admiral Griffin, members of the General Board, Captain Bullard and all naval officers concerned enthusiastically pronounce the mobilization a brilliant success. Mr. Stevenson and all the forces under him have carried out their work with punctuality and precision. All the officers of the navy express themselves in terms of highest admiration for what they have done. Am leaving for Naval Academy at 10 A.M.

J. J. CARTY, *Chief Engineer.*

Mr. Bethell replied by telegraph as follows:

TELEGRAM
NEW YORK, May 8, 1916.

J. J. CARTY, ANNAPOLIS, MD.

Your telegram respecting successful execution of program of mobilization in coöperation with Navy Department received. The expressions of the Secretary of the Navy and other high officials of the Government which you report are exceedingly gratifying. I most heartily congratulate you, Mr. Stevenson, and all others concerned in the formulation and execution of the plan, upon this splendid achievement.

U. N. BETHELL, *Senior Vice-President.*

Subsequently the following letter was sent:

NAVY YARD, NEW YORK, May 8, 1916.

FROM: Rear Admiral N. R. Usher, U. S. Navy
TO: Mr. T. H. Atkinson, American Telephone & Telegraph Co., New York, N. Y.

The Commandant takes pleasure in personally expressing his thanks to you for the part you have taken in the demonstration of the telegraph and telephone just completed, and has the pleasure of enclosing copy of a telegram received from Rear Admiral W. S. Benson, U. S. Navy, Chief of the Division of Operations of the Navy Department, extending the thanks of the Navy Department for your hearty coöperation and assistance in making this demonstration such a great success:

(COPY OF TELEGRAM)
UNITED STATES NAVY DEPT.,
WASHINGTON D. C., May 8 1916, 8 A.M.

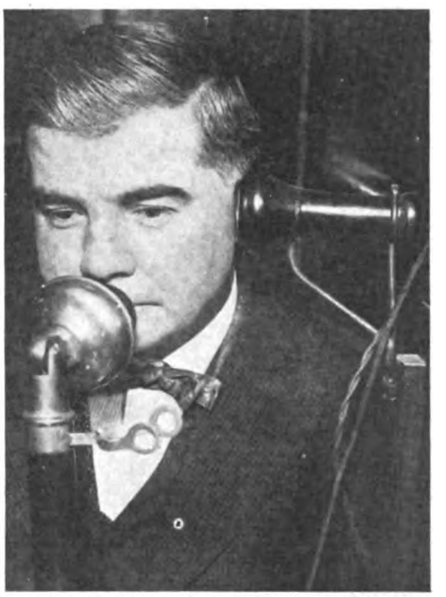
ADMIRAL USHER:—

All stations at 8 A.M., Washington time, demonstration will be over and regular service will be resumed. Thank the officials and operators of the Telephone Company for their hearty coöperation and assistance in making this demonstration such a great success. 08008.

(Signed) BENSON.

N. R. USHER,
Rear Admiral, U. S. Navy,
Commandant, Navy Yard and Station.

It's Always Possible to Use the Telephone



Judge David Moylan of Cleveland, O. After losing both arms, he studied law, became a councilman, attorney, and judge.

DAVID MOYLAN, a municipal judge of Cleveland, O., also a councilman and practicing attorney, has attained his present position of importance and distinction without the use of his arms, but not without the use of the telephone. Early in his career he was a railroad switchman and in two successive accidents he lost first his right arm, then his left. After the second accident he turned to the study of law. He wrote his bar examinations by holding the pen between his teeth. No less determination was displayed in his use of the telephone. Physical handicap could not cut him off from the use of this instrument of efficiency and accomplishment, now even more essential to him than to others, and the accompanying photograph shows how he arranged to make the telephone his constant ally and tool.

Prisoner Tried and Fined Over Telephone

Okmulgee, Okla.—An interstate session of court over long-distance telephone was held between Okmulgee and Texarkana, Ark., the prisoner arraigned and fined and then released when the fine was paid to a representative of the absent Court.

Ernest Davis, a local restaurant keeper, was arrested on a charge of obtaining money under false pretenses. Constable Crowell appeared here to take him to Texarkana for trial, and it was suggested that the trial be held by telephone to save time and the expense of traveling, and this was done.—*Newspaper Item.*

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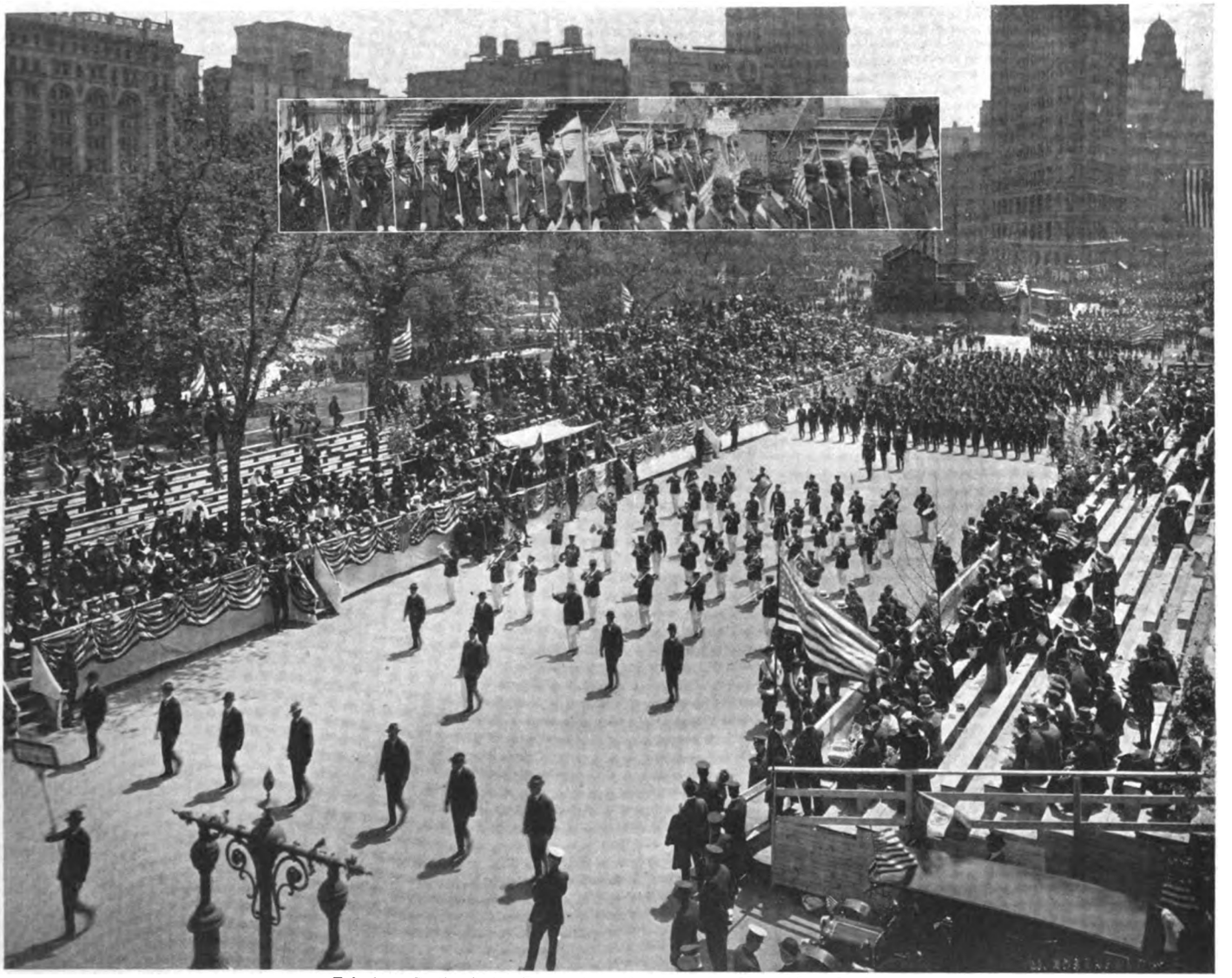
Volunteers for Preparedness



Telephone Section in the Preparedness Parade in New York, May 13, 1916

THE Engineers' Division in the Preparedness Parade on May 13 comprised about 7,000 men, and of these nearly a thousand, or about 15 per cent., were employees of the Bell System. Several employees who desired to march took it upon themselves to start an inquiry which resulted in enrolling about 400 from the Western Electric, who had already organized, intending to march with the electrical trades, 230 from the A. T. & T. Co., and 250 from the New York Telephone Company.

The General Parade Committee gave permission for 800 men and a band of fifty pieces to parade as a unit, but this number was exceeded within a few days and many had to find places in other sections.

The formation of the section was as follows:

Major F. N. Whitley, of the 22d Regiment N. G. N. Y. followed by a standard bearer, behind whom marched the Major's aides, Messrs. R. D. Valliant, A. T. & T. Co., C. Badeau, F. T. Woolverton, and J. D. Newman, New York Telephone Company, and J. P. Maxfield, A. E. Hague, and J. E. Woodruff, Western Electric Company.

Then came Mr. F. B. Driscoll, A. T. & T. Co., to whom was assigned the immediate direction of the Telephone section, followed by his aides, Messrs. E. R. Mackenzie, W. H. Copithorne, and E. L. Stone, A. T. & T. Co., and C. C. Graves, Western Electric Company.

Next came the band of fifty pieces, and behind them marched the platoons of A. T. & T. men, led by Mr. K. W. Waterson, followed by his aides, Messrs. B. Gherardi, J. L. R. Van Meter, and W. J. Hoar.

Then the New York Telephone men, led by Mr. R. DeV. Hope, followed by his aides, Messrs. W. A. Farrington, L. B. Daumont, and C. L. Lee.

And after them came the Western Electric men, marching in two battalions. The first battalion was led by Mr. E. B. Craft, followed by his aides, Messrs. E. E. Heinrichsen, J. H. White, H. A. Larlee, and W. E. Swigert. The second battalion was led by Mr. A. W. Lawrence. The platoons consisted of twenty men each, and a leader.

The organization was perfect, the men carried themselves well, and when the Telephone regiment passed the reviewing stand, saluting with flags raised in the air, while the band played "Hello, 'Frisco," it made a decided hit.

THE "field telephone service" of the police constituted "a degree of preparedness and efficiency which compared favorably with the German army," says the *Evening Telegram*.

A private telephone exchange was located under the grand stand in Madison Square, with wires leading to all other central points, as well as to police headquarters. Bulletins were received from all along the line of march, and orders given in return, without the loss of an instant, whereas on all former occasions of this kind the commanding police official was continually dashing up and down the line on horseback or in an automobile to give orders, or had to send his orders by bicycle policemen.

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National Meeting of American Institute of Electrical Engineers

PLATFORM AND PORTION OF AUDIENCE AT AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS MEETING IN NEW YORK, MAY 16: Front Row, Left to Right 1. Thomas A. Watson; 2. E. Gybbon Spillsbury; 3. Capt. W. H. G. Bullard, U. S. N.; 4. Theodore N. Vail; 5. Dr. John H. Finley; 6. J. J. Carty; 7. Dr. Alexander Graham Bell; 8. Dr. M. I. Pupin; 9. C. le Maistre of London; 10. Dr. Alex. C. Humphreys; 11. Frank J. Sprague.

THE United States of America ("Carty's Hall," as Dr. Finley called it in his address), was the scene of the national meeting of the American Institute of Electrical Engineers held on the evening of May 16 at the hour of five-thirty, seven-thirty, or eight-thirty, according to the differences in standard time. Mr. J. J. Carty, president of the Institute conducted the meeting from the United Engineering Societies Building in New York, and those in attendance were gathered to the number of 5,100—1,100 in New York, 1,000 in Chicago, 900 in Boston, 850 in Philadelphia, 500 in Atlanta, and 750 in San Francisco. Every member and guest present was provided with a telephone receiver and could hear and take part in the largest meeting, geographically if not numerically, ever held to transact the affairs of any organization. Sections of the Institute in Denver and Salt Lake City also listened to the proceedings, but did not participate.

"Is there any other business to come before the meeting?" asked Mr. Carty near the end of the program.

Three thousand miles away Mr. Harris J. Ryan, in San Francisco, offered the following resolution:

"*Resolved:* That this national meeting of the American Institute of Electrical Engineers in Boston, San Francisco, Atlanta, Chicago, Philadelphia, and New York, now assembled, does hereby express its deep appreciation of the efforts of all those who have coöperated in the holding of such a meeting, which is now for the first time held in any country; and that a record of the proceedings of this meeting which is made possible by the inventive genius and by the engineering ability of its own membership, be spread upon the minutes of the Institute, where, for generations to come, it will serve as an inspiration to engineers everywhere, and will mark an epoch in the history of American engineering achievement."

"You have all heard the resolution. Is the resolution seconded?" said Mr. Carty.

"I second the resolution," Prof. Charles R. Cross in Boston responded.

"The resolution is duly made and seconded. Is there any discussion?" asked Mr. Carty.

From Philadelphia Mr. J. H. Tracy amended the resolution: "I move an

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ATLANTA, GA., SECTION OF AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS PARTICIPATING IN THE NATIONAL CONVENTION, MAY 16, 1916, HELD SIMULTANEOUSLY IN NEW YORK, BOSTON, PHILADELPHIA, CHICAGO, ATLANTA, AND SAN FRANCISCO.

At speaker's table—Left to right: 1. Dr. Brown Ayres; 2. G. K. Selden; 3. A. M. Schoen; 4. Dr. C. E. Ferris; 5. Dr. Chas. M. Snelling; 6. H. E. Bussey; 7. W. T. Gentry.

amendment to the effect that the secretary of the Institute be instructed to send to each of the speakers of the evening a copy of this resolution."

Mr. Bancroft Gherardi seconded the amendment in New York.

"Is the amendment accepted?" asked Mr. Carty.

"The amendment is accepted," said San Francisco.

"The amendment is accepted," said Boston.

"Are you ready for the question on the resolution as amended? If you are, all in favor say 'aye'; contrary minded 'no.' [From the six cities came a chorus of "Ayes."] The resolution is carried."

Proposed in San Francisco, seconded in Boston, amended in Philadelphia and New York, a question had been voted upon simultaneously in San Francisco, Chicago, Atlanta, Boston, Philadelphia, and New York. Never in the history of parliamentary procedure had such a thing been done, and the ease and rapidity with which the motion was discussed and passed marked this the beginning of a new epoch in the evolution of parliamentary methods. The practicability of doing business with large gatherings of people in widely scattered localities was demonstrated and it was proved to be eminently satisfactory. The comment of one of the newspapers the next morning was that the American Institute had held "a new sort of national convention, without having to reserve hotel accommodations or to pay traveling expenses of the delegates. . . . Nothing so remarkable was ever attempted before in these days of constantly progressive scientific achievement. The success of this unique experiment was truly marvelous, epoch-making."

This great national meeting was opened by Mr. Carty, who called the roll of the cities present and then welcomed the members to this unique national assembly of their profession.

The greetings of President Wilson were received in a telegram to Mr. Carty, who read them to the assembled gatherings:

John J. Carty, President, American Institute of Electrical Engineers, 33 West 39th street, New York.

May I extend my warm congratulations to you and to the members of the American Institute of Electrical Engineers upon the unique and singularly interesting meeting into which it has gathered its members in Boston, San Francisco, Atlanta, Chicago, Philadelphia, and New York. To conduct such a meeting by telephone and make it possible for men scattered all over the country to listen to the proceedings and participate in them, is certainly a most interesting evidence of the inventive genius and engineering ability represented by the Institute. It is with genuine satisfaction that I avail myself of this occasion to express my own deep appreciation of the work of the Institute in the development of the country's resources.

WOODROW WILSON.

After the announcement of the results of the election of officers for the ensuing year, Mr. Harold W. Buck, the president-elect, made a short address to the nation-wide assemblage, and Mr. C. le Maistre, of London, brought the greetings of the British Engineering Societies. Then the voices of Dr. Alexander Graham Bell, Mr. Theodore N. Vail, and Mr. Thomas A. Watson came over the wire in turn and thrilled their far-flung audience. These men, who inaugurated and built up the science of telephony, the leaders of the great army of telephone engineers who have made this great American science what it is, are all members of the American Institute; in fact the Institute claims telephony as an art not only American, but the work of Institute members.

All of the meeting was not held over the wire. In each section a local program took place during an interval between parts of the telephone program. The New York audience was addressed by Dr. John H. Finley, president of the University of the State of New York, and the Boston, Philadelphia, Atlanta, Chicago, and San Francisco local programs included respectively addresses by Dr. A. Lawrence Lowell, president of Harvard, Dr. Edgar F. Smith, provost of the University of Pennsylvania, Dean C. E. Ferris, engineering faculty, University of Tennessee, Dr. Harry Pratt Judson, president, University of Chicago, and Dr. Ray Lyman Wilbur, president, Leland Stanford, Jr., University.

When the sections of the national meeting came together again after their local programs, each in turn sent its greetings to the others and then came a concert of patriotic songs—"Dixie" from Atlanta, "Yankee Doodle" from Boston, "America" from Chicago, "Hail, Columbia" from New York, "Columbia, the Gem of the Ocean" from San Francisco,

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and from Philadelphia "The Star-Spangled Banner."

The essence of Mr. Carty's greeting from New York was contained in these words:

The New York members feel this means a permanent union of all of the sections of the Institute into one harmonious Institute, without any sectional feeling, and that this meeting emphasizes the fact that sectionalism in the Institute, as well as in the country at large, is a thing of the past, and that with the instruments which have been developed by members of the Institute, sectionalism in our industry is forever dead.

A brief address was made by Dr. Michael I. Pupin, who drew an inspiring picture of the work of the engineer. Said Dr. Pupin:

Science is divine, it is heavenly; its laws are immutable and true independently of the thought of man. Art is human, it is earthly; its laws are formulated with respect to the mental attitude of man and its main object is the happiness of man. The abode of science is heaven and the abode of art is earth. The engineer is the golden chain which connects the heaven of science to the firm terrestrial foundations of the human arts . . . The demonstration of this evening is a brilliant illustration of this noble work of the engineer. The best in all the arts which are designated by the names of Electrical Engineering, Mechanical Engineering, Civil Engineering, and Chemical Engineering has been called into play by the engineers of the American Telephone and Telegraph Company for the purpose of carrying out the dictates of the immutable laws of the Electrical Science . . . Science said let this be done and the engineers of the American Telephone and Telegraph Company did it. Never in the history of mankind did a single act of the engineer contribute more to the happiness of mankind than this magnificent accomplishment of the engineers which we have witnessed this evening. Never did the engineer demonstrate more brilliantly that he is one of the great public benefactors.

The people of the United States are proud that they have such engineers, and their national pride will give birth to national confidence . . .

After greetings from the honorary secretary, Mr. Ralph W. Pope, the motion to adjourn was made from Atlanta, seconded from Chicago, and Mr. Carty put the question from New York, closing the most remarkable as well as the most significant meeting that has probably ever been held by this or any similar society.

At this time such a national meeting is of more than ordinary importance, illustrating as it does in such a notable manner the contribution of the engineers to the nation's means of self-defense and comprehensive readiness for emergency, and showing as nothing else could what the engineers have done to make this a really united nation. The high perfection of the great structure of engineering achievement they have reared cannot fail to gratify the pride of every American.

Not only in the fact of its national scope geographically, was this meeting an essentially American and national affair, nor in the fact that the science of telephony whose triumphs it so vividly demonstrated is entirely American. The achievements of the members of the Institute in the four great fields of electrical communication, electric power, lighting, and transportation, are the result of the national characteristic—of our people and of our Government—of freedom and the encouragement of individual initiative. Unhindered by Government or political levelers, the constructive genius of America, of which the American Institute of Electrical Engineers is a noble example, has risen to accomplishments unequaled in the world. As the result of this encouragement of private enterprise, America has to-day a body of scientists and engineers, a fabric of engineering achievement, such as no other nation can command, and the United States Government has but to ask for these resources and they are placed at her disposal. Already the American Institute has placed some of her ablest members at the service of the Government, on the Naval Consulting Board, and is furnishing men to act on the committees to be appointed in every State for organizing the industries, to be made available to the national service in the event of any emergency. It is notable that it was to the engineers and chemists that the nation turned first when the possibility of a crisis and the necessity of preparation became apparent.

This meeting of the Institute not only made plain to the members of the electrical engineering profession the part they have already played in the problem of national defense, by the work which they have done for peaceful ends, but it served to give to the men inside the profession and to those who contemplate entering it, the comprehensive view of the work as a whole which is so easily lost sight of. It was a chance to step away from the technical details and take a look at the great structure of their work, to see its effect upon civilization. The view which they saw at this meeting was an inspiring one indeed, an incentive to new achievement, not only for the greater upbuilding of the profession, but for the service of the nation itself—indeed, of the world.

Flag on top of Telephone and Telegraph Building, No. 195 Broadway, first thrown to the breezes 9 o'clock on the morning of the Preparedness Parade, May 13, 1916; height of flag, 137 feet above roof; height of roof from curb, 360 feet. Dimensions of flag, 25 x 40 feet.

By-product of the Job

LINEMAN Harry Boutillette, Newark, was working on a pole in the rear of the grounds of Mr. P. R. Simmonds, manager of the New York office of the Kernchen Company, Chicago, when he saw a suspicious looking stranger enter the house. Boutillette called to a young man nearby and asked if anyone was at home. Learning that there was not, he told what he had seen. The young man immediately went into the house and encountered the stranger in the hall. A struggle ensued. Boutillette, hearing cries for assistance, called Police Headquarters from the pole on which he was working. In a few moments the police had arrived and taken the sneak thief into custody.

The alertness of Boutillette in following up the matter, and in using the resources at his disposal to such good effect, was greatly appreciated by the owner of the house, who wrote the following letter to the Company:

GENTLEMEN: I wish to bring to your attention, and request you to give a copy of this letter to your lineman, who was working in the rear of No. 301 Chadwick avenue, yesterday, and who called the attention of one of my family to a sneak thief having entered the house, which resulted in his capture.

I very much appreciate his public-spirited action, and will thank you to compliment him upon same.

Yours very truly,
KERNCHEN COMPANY,
P. R. SIMMONDS, *Manager N. Y. Office.*

Silver Linings

Consider the telephone next,
And how it assists you to stall!
For only a nickel you're out of a pickle,
And don't have to shave when you call!
New York Tribune.

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Franklin Institute Honors Telephone Men

Mr. Carty and the American Telephone and Telegraph Company Awarded Medals

THE achievements of telephony were recognized as the highest attainments of applied science now before the world, in this or any country, by one of the greatest of scientific institutions, on May 17, when the Franklin Institute of Pennsylvania awarded to Mr. Carty the Franklin medal and to the American Telephone and Telegraph Company the Elliott Cresson medal.

Two Franklin medals are awarded each year as one of the means of carrying out the purpose of the Institute to "promote the discovery of physical and natural laws and their application to increase the well-being and comfort of mankind." They are awarded "to those workers in physical science or technology, without regard to country, whose efforts, in the opinion of the Institute, have done most to advance a knowledge of physical science or its applications." This year the Franklin medals were awarded to Prof. Theodore William Richards of Harvard University for research and discoveries in pure science, and to Mr. Carty "in recognition of his long-continued activities in the telephone service, his important and varied contributions to the telephone art, his work in the establishment of the principles of telephone engineering, and his signal success in directing the efforts of a large staff of engineers and scientists to the accomplishment of the telephonic transmission of speech over vast distances."

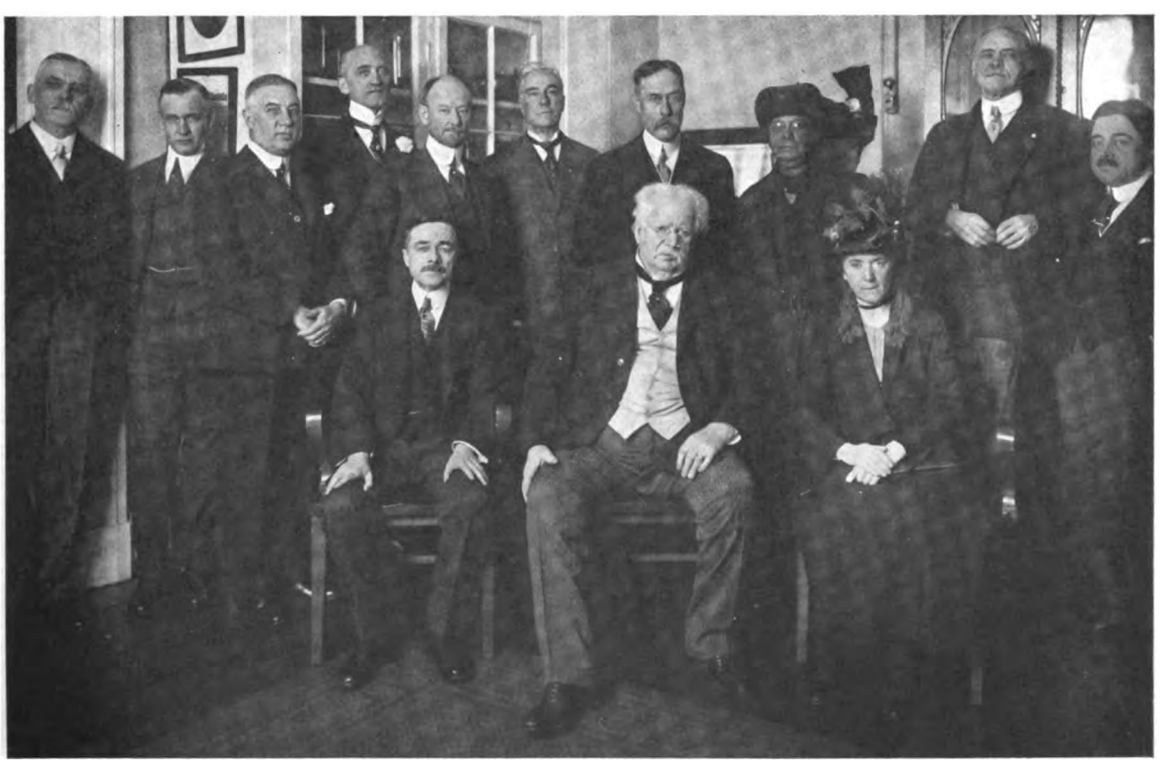
The Elliott Cresson medal was awarded to the American Telephone and Telegraph Company "in recognition of its constructive and far-seeing policy in the development of the art of telephony; in the promotion of telephone engineering; in the establishment of its telephone system in every part of the United States and for placing all of the States of the Union in speaking communication."

Mr. Vail and Mr. Carty attended the meeting of the Institute in Philadelphia, to accept the awards, and in recognition of the honor to the telephone industry accorded by the Institute, a demonstration of wireless and transcontinental telephony was given as part of the ceremonies. It was a feature of the meeting particularly appropriate, since the purpose of the meetings of the Institute is to "present, exhibit, or discuss new inventions, discoveries, or important engineering projects and notable achievements in all fields of scientific progress," and from its platform have been shown for many years inventions which have revolutionized industry.

The wireless demonstration included conversations between Mr. Carty and Lieutenant Noyes, U. S. N., at the navy building in Washington, and between Captain Bullard at the Institute and Captain Russell in Washington. Mr. Carty while talking with some of the representatives of the Navy Department spontaneously suggested establishing wireless telephone communication with the League Island Navy Yard on June 17, when the transport *Henderson* will be launched, and arrangements were made, on the spot, to have the wireless telephone a part of the ceremonies. Perhaps the most impressive feature of the wireless demonstration was the Star Spangled Banner played at Arlington and transmitted over the wireless to New York, thence to Philadelphia by wire. The transmission was magnificent.

The audience of distinguished scientists and laymen included many whose names are connected with the telephone industry; Mr. U. N. Bethell, Mr. N. C. Kingsbury, Mr. F. A. Stevenson, Mr. Bancroft Gherardi, Mr. L. H. Kinnard, and Mr. Thomas A. Watson. There were also present Mrs. Stevenson, Mrs. Watson, and Mrs. Carty. After receiving the medal and the certificate which accompanied it, Mr. Carty arose and gave them into the keeping of Mrs. Carty, at which thundering applause broke out again from the audience.

The addresses by Mr. Harry F. Kellar in introducing the medallists for the awards, and of Mr. Vail and of Mr. Carty in accepting them, are full of extreme interest from beginning to end. Mr. Vail's words, a living inspiration to every employee, are reproduced in full, but only the high lights in the longer addresses will space permit us to quote.



GROUP AT THE FRANKLIN INSTITUTE: Seated, Left to Right—1. J. J. Carty; 2. Theodore N. Vail; 3. Mrs. J. J. Carty.—Standing, left to right—1. Dr. Harry F. Keller; 2. W. C. L. Eglin; 3. Capt. W. H. G. Bullard, U. S. N.; 4. F. A. Stevenson; 5. U. N. Bethell; 6. Thomas A. Watson; 7. Dr. Frank J. Goodnow; 8. Mrs. Walton Clark; 9. Mrs. Thomas A. Watson; 10. Dr. Walton Clark (President of The Franklin Institute); 11. Dr. R. B. Owens (Secretary of The Franklin Institute.)

In introducing Mr. Carty for the award, Mr. Harry F. Keller paid high

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Mr. Vail's Address

Accepting the Elliott Cresson Medal Awarded by the Franklin Institute

Mr. President and members of the Institute, ladies and gentlemen:

ON behalf of the American Telephone and Telegraph Company I accept this most complimentary tribute.

When the telephone business was first organized, the possibility, but not the magnitude of the future, was recognized. Then was adopted, after deliberation and discussion by the founders of the business, the comprehensive policy of making the telephone a useful utility, broad in its scope and universal in its application. This policy has been faithfully followed by those who have been responsible for the operations of the business.

We accept this tribute of to-day as a recognition by this great Institute and by the public that that policy was a wise one, and that it had been wisely and successfully carried out.

This tribute has another and even greater significance.

The telephone service is an individual service, rendered to individual users by the individual members of the telephone organization.

It is a service dependent upon the right thing being done at the right time, by the right person, in the right way. To the extent that all this is done the service is good; if any fail, to that extent the service is defective.

This requires on the part of every individual member: to the organization, loyalty; to their obligations, fidelity; and, in the performance of their duty, conscientiousness.

This award is, therefore, a personal tribute to each individual connected with the service, to the full recognition by them of their obligation to the organization and to the public, and each one will so feel and appropriate it.

Gentlemen, on behalf of my Company and on behalf of my associates, on behalf of every individual connected with the Bell System, please accept hearty thanks and expressions of the highest appreciation of your action.

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tribute to Mr. Carty's great contributions to scientific knowledge, saying in part:

To tell the story of the marvelous development of the art of telephony here in America, the country of its birth, is to narrate the rise and development of an entirely new science—that of telephone engineering. While a great army of engineers, inventors, financiers, and others have played more or less conspicuous parts in this development and contributed their share to the recorded achievements, the dominating figure in the story is that of him who is now the Chief Engineer of the American Telephone and Telegraph Company.... In 1887 he was appointed to the position he occupies to-day.... He thus became responsible for all the engineering work, both of plant and traffic, of the great Bell System, and all the great developments that have since been carried to a successful conclusion were made under his direction. Among these is the longest underground telephone cable in the world, connecting Boston, New York and Washington. Until 1912 the steady improvement of the lines and apparatus permitted the extension of the service to Denver, Colo., a distance of 2,100 miles from New York

Obverse of Franklin Medal to Mr. Carty

City. Three years later . . . the dedication to the use of the public of the completed transcontinental telephone circuits from San Francisco to New York and Boston, was held. . . .

With achievements such as these it might be supposed that even the most ambitious of mortals would be content to rest upon his laurels. Not so with our medallist. On the heels of the completion of the transcontinental telephone circuits came the announcement that this wizard had accomplished and demonstrated what only a few years ago the wildest flights of the scientific imagination would scarcely have suggested as possible. I refer to the transmission of the speaking voice by a wireless telephone to places outside and far beyond the network of the Bell System. This epoch-making achievement, supplementing as it does the wire service, is now well under way to bring the ultimate goal of telephony—the establishment of a universal system.

Such, Mr. President, are the services for the benefit of mankind which the master mind of the telephone art has rendered as the results of a lifetime of indefatigable labor, guided by a scientific imagination of the highest order. But a few years ago his name was comparatively unknown outside of his profession, to-day it is one to conjure with in every quarter of the globe; it is Mr. John J. Carty, chief engineer of the American Telephone and Telegraph Company, whom I have the honor to introduce to you as the recipient of the Franklin Medal.

Mr. Carty responded in a speech on the development of the telephone, full of that idealism and keen enthusiasm which have for so many years been the inspiration of his staff, and ending with a note of prophecy for the world which thrilled his audience. Mr. Carty said in part:

It is of peculiar interest to recall the fact that the first words ever transmitted by the electric telephone were spoken in a building at Boston, not far from where Benjamin Franklin first saw the light. The telephone, as well as Franklin, was born at Boston, and like Franklin, its first journey into the world brought it to Philadelphia, where it was exhibited by its inventor, Alexander Graham Bell, at the Centennial Exhibition in 1876, held here to commemorate the first hundred years of our existence as a free and independent nation.

THE FRANKLIN INSTITUTE
OF THE
STATE OF PENNSYLVANIA
FOR THE PROMOTION OF THE MECHANIC ARTS

AWARDS

THE FRANKLIN MEDAL

TO

JOHN J. CARTY

IN RECOGNITION OF HIS LONG-CONTINUED ACTIVITIES IN THE TELEPHONE SERVICE, HIS IMPORTANT AND VARIED CONTRIBUTIONS TO THE TELEPHONE ART, HIS WORK IN THE ESTABLISHMENT OF THE PRINCIPLES OF TELEPHONE ENGINEERING, AND HIS SIGNAL SUCCESS IN DIRECTING THE EFFORTS OF A LARGE STAFF OF ENGINEERS AND SCIENTISTS TO THE ACCOMPLISHMENT OF THE TELEPHONIC TRANSMISSION OF SPEECH OVER VAST DISTANCES.

PHILADELPHIA,
MARCH 1, 1916.

Certificate Accompanying The Franklin Medal Awarded to John J. Carty

It was a fitting contribution to American progress, representing the highest product of American inventive genius, and a worthy continuance of the labors of Franklin, one of the founders of the science of electricity as well as of the Republic.

Nothing could appeal more to the genius of Franklin than the telephone, for not only have his countrymen built upon it an electrical system of communication of transcendant magnitude and usefulness, but they have made it into a powerful agency for the advancement of civilization, eliminating barriers to speech, binding together our people into one nation, and now reaching out to the uttermost limits of the earth, with the grand aim of some day bringing together the people of all the nations of the earth into one common brotherhood. . . .

. . . . From only two men in 1876, this staff has, in 1915, grown to more than 600 engineers and scientists. The above number includes only those devoted to experimental and research work and engineering development and standardization, and does not include the very large body of engineers engaged in manufacturing and in practical field work throughout the United States. Not even the largest and most powerful Government telephone and telegraph administration of Europe has a staff to be compared with this. It is in our great universities that anything like it is to be found, but even here we find that it exceeds in number the entire teaching staff of even our largest technical institutions.

A good idea may spring up in the mind of man anywhere, but as applied to such a complex entity as a telephone system, the countless parts of which cover a continent, no individual unaided can bring the idea to a successful conclusion. A comprehensive and effective engineering and scientific and development organization such as this is necessary, and years of expensive work are required before the idea can be rendered useful to the public. . . .

In view of the technical and scientific nature of the telephone art, an unusually high-grade personnel is required in all departments, and the amount of unskilled labor employed is relatively very small. No other art calls forth in a higher degree those qualities of initiative, judgment, skill, enterprise, and high character, which have in all times distinguished the great achievements of America. . . .

The two telephone instruments of 1876 had become many millions by 1916 and the first telephone line, a hundred feet long, had grown to one of more than three thousand miles. . . .

Reverse of Franklin Medal to Mr. Carty

In the case of the wireless telegraph the number of messages which may be sent simultaneously is much restricted. In the case of the wireless telephone, owing to the thousands of separate wave lengths required for the transmission of speech, the number of telephone conversations which may be carried on at the same time is still further restricted and is so small that all who can employ wires will find it necessary to do so, leaving the ether available for those who have no other means of communication. This quality of the ether which thus restricts its use is really a characteristic of the greatest value to mankind, for it forms a universal party line, so to speak, connecting together all creation, so that anybody anywhere who connects with it in the proper manner, may be heard by everyone else so connected. Thus, a sinking ship or a human being anywhere can send forth a cry for help which may be heard and answered.

No one can tell how far away are the limits of the telephone art. I am certain that they are not to be found here upon the earth, for I firmly believe in the fulfillment of that prophetic aspiration expressed by Theodore N. Vail at a great gathering in Washington, that some day we will build up a world telephone system making necessary to all peoples the use of a common language or a common understanding of languages which will join all of the people of the earth into one brotherhood. I believe that the time will come when the historic bell which now rests in Independence Hall will again be sounded, and that by means of the telephone art, which to-day has

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received such distinguished recognition at your hands, it will proclaim liberty once more, but this time throughout the whole world unto all the inhabitants thereof. And, when this world is ready for the message, I believe the telephone art will provide the means for transmitting to all mankind a great voice saying, "Peace on earth, good will toward men."

In his speech of presentation of the Elliott Cresson medal to the American Telephone and Telegraph Company, through Mr. Vail, Mr. Keller said:

In awarding the Franklin medal to Dr. John J. Carty, the Franklin Institute is fully aware that the marvellous achievements of this pioneer and leader in the science of telephone engineering are shared in a large measure by the corporation of which he is the chief engineer, by the men who have developed and directed this vast business enterprise and made the Bell System what it is to-day, and by that wonderfully efficient technical staff which he has created and trained. In recognition of this fact the Committee on Science and the Arts have unanimously recommended that the Elliott Cresson medal of the Institute, the highest distinction it can confer upon a corporation, be awarded to the American Telephone and Telegraph Company . . .

Certificate Accompanying The Elliott Cresson Gold Medal Awarded to the American Telephone and Telegraph Co.

After rehearsing some of the strikng statistics of the work of the Bell System, Mr. Keller continued:

Such figures are simply staggering, and we can only marvel at the vastness of this system of communication which reaches every part of our country, and triumphantly proclaims man's conquest over space and time. With a feeling akin to awe we think of the man whose prophetic vision, unerring judgment, and matchless executive ability have guided the forces which have wrought this wondrous evolution. . . . In spite of innumerable obstacles he succeeded in developing the new invention of Alexander Graham Bell into a commercial success, and he soon realized that it had possibilities far beyond mere local service. From his first achievement in long-distance telephony — the line connecting Boston and Providence—his dominant spirit has continued to secure improvements in telephone material and construction until to-day the lines span the distance from the Atlantic to the Pacific coast. As president of the American Telephone and Telegraph Company he has effected the financial and technical organization of this vast corporation, and nothing could be more appropriate on this occasion than his receiving from your hands the Elliott Cresson medal awarded to his company.

Obverse of Elliott Cresson Medal to A. T. & T. Co.

Reverse o Elliott Cresson Medal to A. T. & T. Co

Editorial Appreciation

APPRECIATION of effort is the most potent incentive we know for further effort. When it comes from superiors we stroke pridefully the feather in our cap, and when it is publicly expressed by the subscriber himself, we may be pardoned for removing our cap completely and swinging it aloft. And then we "go to it" on the next job.

Those who completed the connection of a direct wire from the American Newspaper Publishers' convention at the Waldorf-Astoria to the office of *The Fourth Estate* at short notice, won for themselves and for the Company the following appreciation which appeared as an editorial in a recent issue of *The Fourth Estate*.

Telephone Service

A striking demonstration of the efficient service rendered by the New York Telephone Company was given on Monday, when *The Fourth Estate* decided that it wanted a direct wire from its publishers' convention headquarters in the Waldorf-Astoria to its editorial offices on Columbus Circle.

Shortly after noon the telephone company was notified by wire of the service desired, and within an hour linemen were on the job making the necessary connections. They worked quickly and four hours after the original request was made the staff in *The Fourth Estate's* room at the Waldorf-Astoria was in direct communication with the main office, almost two miles away.

Every detail of both the Associated Press and American Newspaper Publishers' Association conventions was known in Fifty-ninth street almost as soon as it was known in the hotel, and not a break occurred in the service during the entire period.

The offices were in constant communication with each other all day and well into the nights during convention proceedings, something that was almost impossible when messenger service was the only means of transmitting news.

Combined with the greater efficiency of the telephone service was its low cost as compared with other methods. The expense of the extra extension was most nominal, when the extra benefits it afforded are considered. *The Fourth Estate* is convinced that the telephone way of keeping in close touch with important events happening in rapid sequence is the most efficient method open to newspaper men of the present day.

True, Despite Misconstruction

A Tarrytown subscriber called for the information operator and said, "Central, you advertise, 'When in doubt, telephone and find out!' So will you please tell me what county Amenia, New York, is located in?" The information was readily given to the subscriber as Dutchess County. "Thank you," said he, "I see your motto holds true."

MISS F. G. SHEAN, *Chief Operator, Tarrytown.*

Delayed

In the wee hours of the morn the suburbanite got off the train at the home station. Going to a telephone he sent this night letter: "Will not be at the office to-day. Am not home yesterday yet."—*Jack-o'-Lantern.*

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Telephone Societies

Of New York, Philadelphia, Baltimore, and San Francisco, 6,350 Strong, Join in Greatest Demonstration

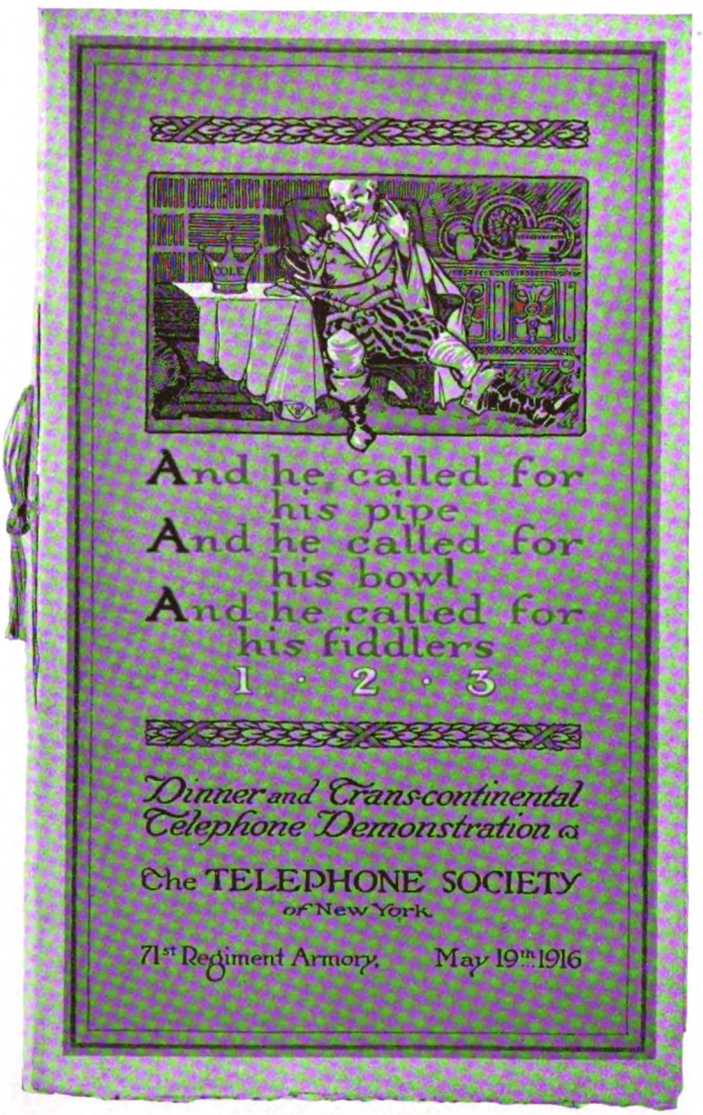
Annual Meeting of The Telephone Society of New York

"THIS is the happiest moment of my life," remarked Mr. Bethell at the dinner and Transcontinental Telephone Demonstration of the Telephone Society of New York in the 71st Regiment armory, Friday night, May 19.

This sentiment found an echo in the breast of every one of the 3,250 members of the Society who were assembled there. It was a great gathering of interested and loyal workers in the Bell organization, comprising employees of the New York Telephone Company, the American Telephone & Telegraph Company, and the Western Electric Company, and from the highest to the lowest there was a camaraderie, an absence of all restraint, but withal a dignity of bearing and a light in the eye of every man which betokened his pride in being a member of the great Bell family.

Officers and subordinates are necessary in business as well as in military organizations, but this occasion proved again that no such distinctions exist in the personal relations among the employees of these companies.

At a meeting of the executive committee of the Society, held on February 8, it was decided to end the season with a big demonstration to include a Transcontinental Telephone Demonstration and a dinner, in connection with the annual meeting. A committee consisting of Messrs. H. W. Casler, chairman, F. E. Congdon, and F. L. Devereux, was appointed to prepare a plan for such an occasion. The special committee reported to another meeting of the executive committee held for the purpose on March 2, and the executive committee voted to adopt its recommendations. A general committee of arrangements was appointed as called for, consisting of Mr. H. W. Casler, chairman, with the following reporting to him: Messrs. R. H. Street, chairman of the reception committee; P. W. Eldridge, chairman of the decorations committee; J. L. Turner, chairman of the music committee; G. G. Volkmar, chairman of the service committee; A. L. DuBois, chairman of the finance committee, H. G. Stokes, chairman of the printing and advertising committee; and A. W. Deas, chairman of the auditing committee, with Mr. J. H. Gordon, Jr., vice-president of the Society, in charge of the program, and Mr. J. D. Newman, secretary-treasurer, as secretary.



Facsimile of Cover of Menu

The special committee held its first meeting on March 13 and organized. Each chairman was authorized to select as many members for his committee as he considered necessary, and on the night of the entertainment the numbers were as follows:

Reception	183
Decorations	6
Music	6
Service	13
Finance	65
Printing and advertising	5
Auditing	3

Frequent meetings of the general committee, by which name the special committee was called, were held, detailed reports of progress submitted, and plans for further arrangements discussed.

It was decided to hold the meeting in the 71st Regiment armory, and, owing to the necessity of erecting tables, installing the telephone equipment, and preparing facilities for the caterer, the armory was secured for two days. Through the courtesy of Capt. W. R. Fearn, quartermaster, who was in charge of the armory, permission was obtained to have access on Wednesday, and this was a valuable privilege. Workers began putting up tables at once so that the telephone installers could follow with the wiring and installing of the instruments. Beginning with Wednesday evening, from forty to fifty employees of the Installation Department worked continuously day and night until Friday afternoon, some of them with only a few hours' sleep. It was impossible to use more men because they had to follow the carpenters. During all this time the decorators were at work putting up flags and bunting, and employees of the Installation Department were engaged in wiring the map.

Everyone was requested to be at the armory not later than six-thirty o'clock, as it was desired to begin the dinner promptly at seven o'clock. When the

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Mr. U. N. Bethell's Address

Delivered by Telephone to the Members of the Telephone Societies of the Eastern Group in New York, Philadelphia, and Baltimore

May 19, 1916

Messrs. Chairmen, and Gentlemen of the three Societies:

ON this happy occasion I warmly greet all and every one of you. This is certainly a fine family party—more than five and a half thousand gathered together in the three capital cities of our Eastern Group Empire. What a fine thing it is to get together in this way and have a good time.

If our Western Electric and A. T. & T. fellow-members will bear with me for a moment, I want to talk from the standpoint of an Eastern Group man. More than ever am I impressed with the greatness of the Group. In the splendid Bell family, among telephone organizations everywhere—in fact, among the great enterprises of the world of every nature—the place held by the Eastern Group is such that none of you, because of your connection with it, need have any other feeling than that of pride and gratification.

You see, I am flinging modesty to the winds, but what harm can a little plain talking among ourselves about ourselves do within the sacred precincts of this family circle?

And what a great family we have grown to be! As J. A. Stewart, who is sitting by my side, has said: "This is some party." But, for each one here, there are eight or nine at home or on the job. Nearly one-third of the telephone workers of the nation are in the Eastern Group. We operate more telephones in the three cities in which we are gathered to-night than there are in the whole of the British Isles, while the Group itself beats the German Empire, France, and Russia combined. In our snug little territory, which covers only a beggarly 6 per cent. of the United States, there are tucked away about one-fourth of the telephones of the nation, and about one-sixth of those of the whole wide world.

Not long ago I was with a friend of yours and mine, in a large Western city, a windy place by the way, and, looking up at the tall buildings, I remarked: "This is a *great* city." "Well," said he after a pause, "it is a *big* city."

Bigness alone does not constitute greatness. The Eastern Group is not only big, but is truly great, because of its purpose and its spirit.

The spirit is here to-night. We all feel it—we all see it—we all know what it is—but no man can describe it, measure it, or call it by name. It's a passion—a religion. No one can understand it without experiencing it.

Not only is the Group great in this very real sense, but the work itself is inspiring, and, in the fullest measure, gratifying.

This is so because we know we are needed—we know we are wanted—we know we are just as essential to the body politic as the nervous system is to the human body.

We not only know these things collectively, but each one of us knows that his particular part of the work, his particular job, if well done—however insignificant it may appear to others—is an indispensable part of the whole.

It is this knowledge that gives our profession its subtle and irresistible charm. It is this that lifts some to heroic heights.

Think of those Baltimore girls, who, in the hour of peril, when their city was in flames,

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stuck to their jobs without flinching, and of those other splendid girls, who in times of flood and storm have never faltered, but have done their duty faithfully and nobly.

Think of the men with climbers on who time and again have taken their lives in their hands, and suffered all sorts of hardships to restore storm-tossed and broken lines, that the work of the world might go on.

Think of the men and women in all branches of the service who have never failed to rise above personal comfort and convenience, but sacrificing these have met and successfully coped with many a grave emergency. And their name is Legion.

Even in the ordinary everyday doing of the job there is a fine display of the stuff out of which circumstance makes heroes. Fidelity to one high purpose—to do well what we have to do—characterizes our whole magnificent operating force, which time and again has been tried and never found wanting, our plant force always ready for any emergency, our ambassadors of commerce, our accountants, and our very essential gatherers of the wherewithal that keeps the whole machine going.

And let us not forget the legal gentlemen. When we think of the battles they have won, in establishing sound and just principles, we must stop saying of them: "They are lawyers, but otherwise all right!"

Then there is the Executive Staff—including the pinch hitters. They have very little time for the grandstand. They enjoy being in the game. They also are proud of the record and proud of the Group to which they belong.

So much for the Eastern Group. There are others. We Eastern Group men are proud of our Western Electric brothers. We know what they have done in developing the art and in feeding the machine, particularly during this period of unwonted activity, this period of great stress and strain. We cannot for a moment forget the splendid work they have done under most trying circumstances, and we have a right to feel proud of the results they have accomplished.

We are also proud of the achievements of our indulgent parent, the A. T. & T., and of all our sister groups. They, too, are doing beautiful work, and all together, under the Bell Banner, we are helping, in a large way, to make our nation—absolutely and in fact—one and indivisible.

All of us have reason to be especially proud of Dr. Carty—*our J. J.*—because of the brilliant work done by him, and a noble band of workers under his inspiring leadership. Their recent achievements—achievements of the Bell organization—will rank among the great things of our day and generation. No scientific accomplishment has aroused a keener interest, held public attention for a longer time, done more to widen the horizon of men and women in all parts of our broad land, and given them more genuine pleasure than that with which the names of these men will always be associated. Their honor is our glory—their distinction our decoration.

As I am about to ring off, if you will excuse a personal word, I should like to say that I have just completed twenty-seven years of continuous service in the Bell organization.

As I look back through the years, there swarms in my memory a multitude of happy recollections, of friendships tested and found true, of loyalty, devotion and sympathy, of rejoicing together over barriers surmounted, of your successes in many fields and in many matters of real consequence. And looking into the future, full of problems for you to solve, full of difficulties for you to overcome, I see nothing that can cool the ardor of your enthusiasm, or circumvent the power of your hopefulness and your ability to achieve.

Good night, and God be with you till we meet again.

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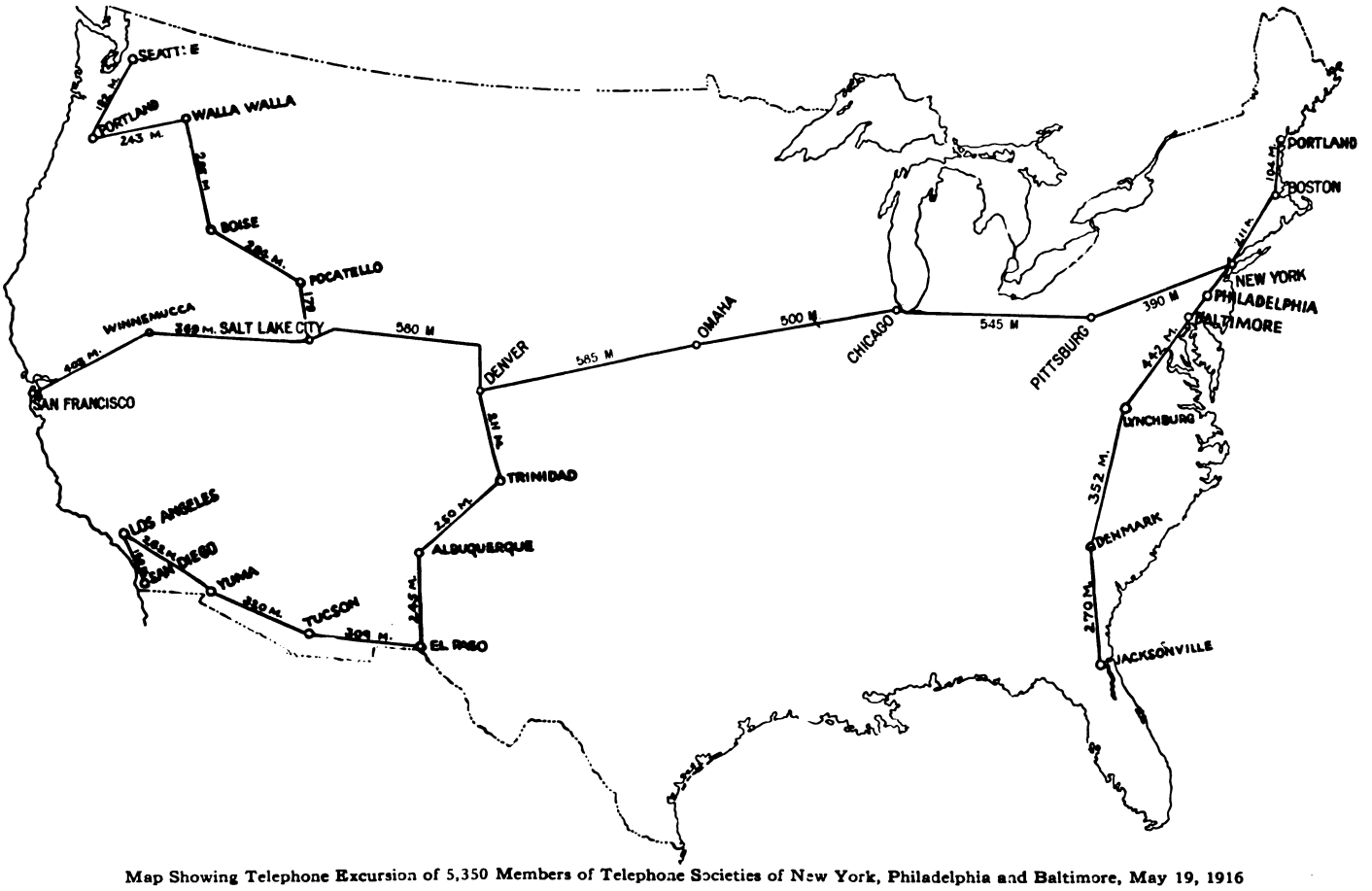

Map Showing Telephone Excursion of 5,350 Members of Telephone Societies of New York, Philadelphia and Baltimore, May 19, 1916

doors to the drill room were opened more than three thousand members marched in and were seated in exactly eleven minutes, and the dinner was begun on schedule time. As soon as the members were seated the taking of a photograph occupied a few moments and the result was the biggest group picture of diners ever taken. The picture is reproduced as an insert with this issue. Copies of the photograph may be obtained from the Secretary of the Society at $2.50 and $1.00 each. The menu of the dinner follows:

Grapefruit
Maraschino Cherries
Olives Celery
Bisque of Tomato
Dinner Biscuit
Broiled Salmon Steak With Parsley
French Rolls
Half Roast Squab Chicken
Braised Sweet Potatoes Garden Peas
Neapolitan Ice Cream
Fancy Macaroons Lady Fingers
Demi-tasse
White Rock
Cigars Cigarettes

The serving of this dinner required the installation of ten stations, each consisting of a gas range, a heater and accessories. Five stations were placed on each side of the drill room. The dinner was furnished by the Terhune Catering Company and it was said to be the largest contract of its kind ever undertaken in America. There were 222 waiters, 10 captains, 35 cooks, 35 dishwashers, and 1 head waiter, making a total of 303 employed in serving the dinner. Plates and dishes numbered 18,000, and 21,000 pieces of small silver were used. There were served 1,500 whole broilers, 1,000 pounds of salmon, and 720 dozen rolls—all of which will give an idea of the magnitude of the undertaking. It was remarkable that the schedule was maintained throughout the dinner, which was served in exactly one hour and thirty-five minutes.

During the dinner music was furnished by the Blue Bell Orchestra, which had been augmented to 70 pieces, conducted by Mr. L. A. Scott, and between courses there was chorus singing by the Blue Bell Glee Club of 107 members led by Mr. J. L. Turner. The entrance march, "The Triumph of Science," was composed for the occasion by Mr. W. F. Schmidt, special agent of the Advertising Department and dedicated to Mr. Carty, and several of the songs were written by Mr. J. L. Turner. Two of these songs which were decided hits were: "Rally 'Round the Boss, Boys," and "Carty, Dear, It's You We Honor."

The Bethell cheer was given after the singing of the first song and the Carty cheer after the other.

Rally 'Round the Boss, Boys!

TUNE: *"Rally 'Round the Flag, Boys!"*

I

In this town there is a man, boys,
His name is U. N. B.—
Shouting for U. N. B. forever!
And his manner, it is charming,
He wears a nice goatee—
Shouting for U. N. B. forever!

CHORUS:

Union forever! We shout with a cheer,
He is our leader, the friend ever dear;
Then we'll rally 'round our boss, boys,
We'll rally ever strong,
Shouting for U. N. B. forever!

II

He's the man we all admire, boys,
A winner through and through,
Shouting for U. N. B. forever!
He's a pretty good old scout, boys,
He'll do for me and you—
Shouting for U. N. B. forever!

III

Ev'ry time he calls upon us, boys,
We'll back him, every one—
Shouting for U. N. B. forever!
Yes, he's done a lot for us, boys,
Our loyalty he's won—
Shouting for U. N. B. forever!

This song was immediately followed by

The Bethell Cheer

Oh, U! Oh, U! Oh, U. N.!

B-E-T-H-E-L-L

SPELLS SUCCESS FOR THE

NEW YORK TEL.

YELL! YELL! YELL!

UNION! UNION! UNION!

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MEETING OF THE BALTIMORE TELEPHONE SOCIETY, MAY 19, 1916

There Were 1,200 Members Present Connected by Telephone With 900 Members of the Philadelphia Society; 1,000 Members of the San Francisco Society, and 3,250 Members of the New York Society

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SEATING ARRANGEMENTS FOR ANNUAL MEETING OF THE TELEPH

3,250 Members Were Present That Evening and Connected by Telephone With 900 Members

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OCIETY OF NEW YORK, 71ST REGIMENT ARMORY, MAY 19, 1916
hiladelphia Society. 1,200 of the Baltimore Society, and 1,000 of the San Francisco Society

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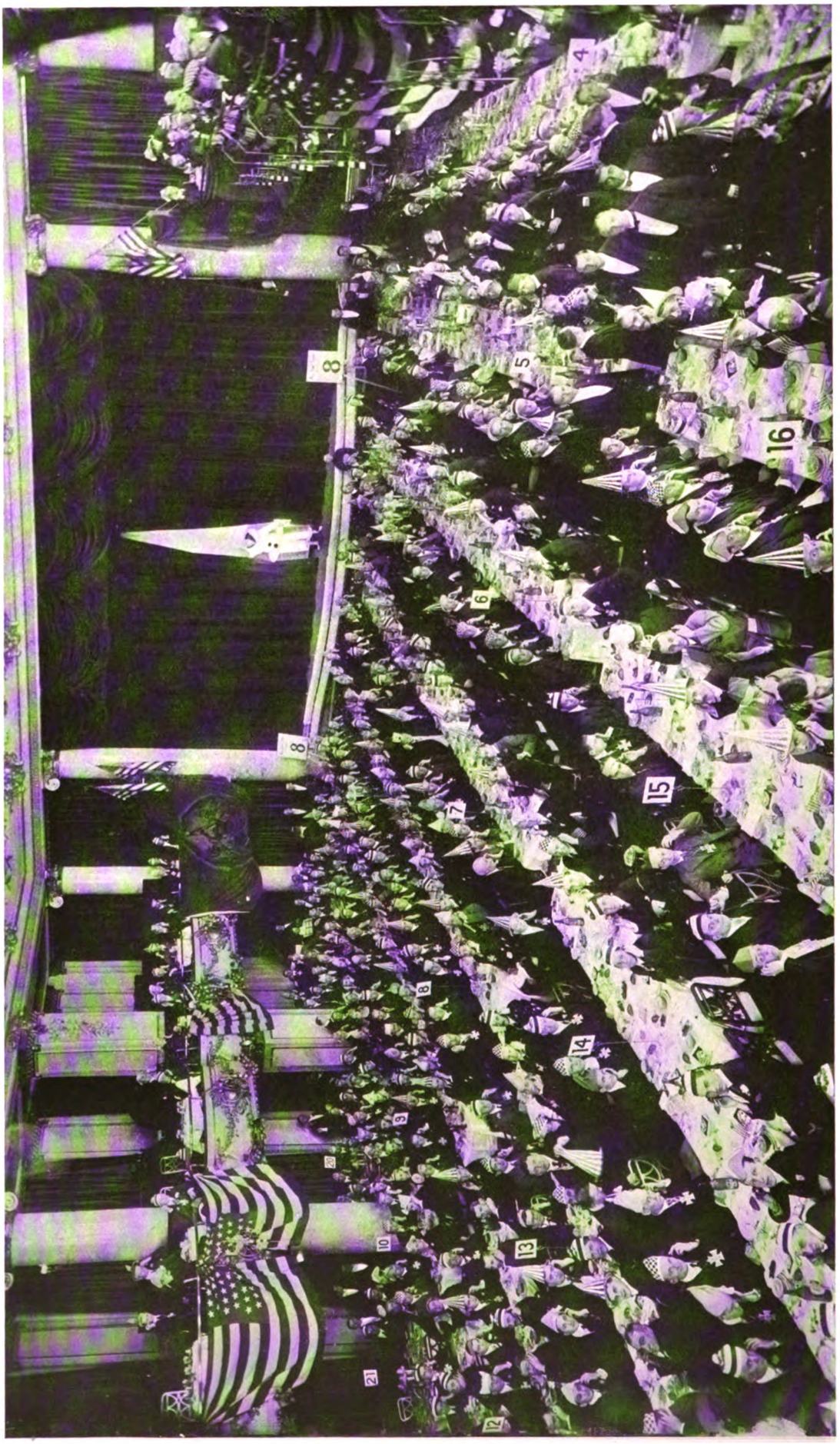

MEETING OF THE PHILADELPHIA TELEPHONE SOCIETY, MAY 19, 1916

There Were 900 Members Present Connected by Telephone With 1,200 Members of the Baltimore Society; 1,000 Members of the San Francisco Society, and 3,250 Members of the New York Society

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DEMONSTRATION CONTROL ROOM AT THE ARMORY

Right to left 1. William McLean; 2. J. G. Truesdell (in charge;) 3. T. H. Atkieson; 4. J. N. Stone; 5. H. A. Goldner; 6. Frank Tiernan. 7, 8, and 9, John Butler, John T. Fisher, and John N. Zeiger, Installers of the New York Telephone Company, who put in the apparatus; 10. (standing with telephone to his ear) W. H. Barnes, Adv. Dept., N. Y. T. Co.

Carty, Dear, It's You We Honor

TUNE: "*Molly, Dear, It's You I'm After*"

I

A dapper little chappie is
Our engineer so gay,
The boys are all enraptured with
His pretty Irish way.
They'd go a mile to see him smile,
It's quite a dream of bliss,
And when he greets this loyal crowd,
We're sure to start with this:

CHORUS:

Carty, dear, it's you we honor;
Carty, dear, our hearts you own;
Sure it's you can work a wonder
Like the wireless telephone.
Now that you've annexed Hawaii
To our system, with no end in sight,
Well, there's nothing left at all, at all,
but circlin' round the globe.
John J. Carty, you're all right.

II

Chief T. N. V., he thought that we
Should reach out to the Fair,
And so he told John to do it—
Just how, he didn't care.
Well, John took on that little job,
Full steam ahead, you bet;
But darned Hawaii stopped his flight,
Else he'd been going yet.

This song was immediately followed by

The Carty Cheer

CARTY! CARTY! HALE AND HEARTY

WHERE'S THE MAN

WHO'S HALF AS SMARTY!

WIRELESS! WIRELESS!

SNAP! BANG! SIZ!

CHIEF ENGINE DRIVER

OF THE WHOLE DAMN BIZ

IS CARTY! CARTY! CARTY!

There was a receiver at every plate, and during the entire evening all announcements were made by telephone from the speakers' table and the business program was conducted in this manner.

Business Meeting

Owing to the absence of the president, Dr. F. B. Jewett, the vice-president, Mr. J. H. Gordon, Jr., presided. The membership committee reported 273 applications; a vote was taken and all the applicants were unanimously elected. The secretary-treasurer's report showed a total membership of 3,280, and his financial statement was read; the report was unanimously accepted and ordered placed on file. Announcement was made of a proposed change in the by-laws to be acted upon at the first meeting of the Society next season.

The report of the nominating committee was then read to the members and on motion of Mr. Bethell, seconded by Mr. Carty, the following officers and executive committeemen for the ensuing year were unanimously elected, there being no other nominations:

President ..... I. J. Thorp
Division Plant Superintendent, New York Telephone Co.
Vice-President ..... R. H. Boggs
Traffic Engineer, New York Telephone Co.
Secretary-Treasurer ..... J. D. Newman
Editor THE TELEPHONE REVIEW, New York Telephone Company.

Executive Committee

H. W. Casler, Division Advertising Manager, New York Telephone Co.
F. E. Congdon, Division Equipment Supt., New York Telephone Co.
A. W. Deas, Division Auditor Receipts, New York Telephone Co.
M. H. Orth, Division Supt. Traffic, New York Telephone Co.
A. C. Thomas, Engineering Dept., New York Telephone Co.
O. B. Blackwell, Engineer, American Telephone & Telegraph Co.
F. L. Devereux, Auditor, Long Distance Lines, American Telephone & Telegraph Co.
E. B. Craft, Development Engineer, Western Electric Co.
R. Gordon, Stores Manager, Western Electric Co.

The chairman then read the following telegram from Dr. Jewett:

Sorry I cannot be at the big joint meeting of the Telephone Societies. Express my regrets and give my greetings to the members all across the continent. Tell them a meeting of this kind was planned when we first discussed the details of the Transcontinental Line in nineteen-nine.

The chairman spoke feelingly and sympathetically of Dr. Jewett's illness and inability to be present and on motion the following resolution was unanimously adopted:

Resolved: That the Telephone Society of New York, at its annual meeting held in the 71st Regiment armory, on May 19, 1916, sends its greetings to its president, Dr. Jewett. We regret exceedingly that he is not able to be with us this evening, but rejoice to learn that he is on the road to recovery, and hope that he will soon be able to return to active duty among his fellow-workers and friends. We wish also to take this opportunity to thank him for the splendid work that he has done as our president in the last two years.

The business meeting was concluded on schedule to the minute.

Mr. Bethell Speaks to Three Societies

The chairman then announced that the Telephone Society in Philadelphia, with 900 members present, and the Telephone Society in Baltimore, with about 1,200 present, were holding meetings and were then in session and the three Societies had been connected by telephone. He then exchanged greetings with the presidents of the two Societies and introduced Mr. U. N. Bethell, who delivered an address by telephone to the members of the three Societies in the Eastern Group.

In Philadelphia and Baltimore motion pictures of Mr. Bethell speaking were shown on a screen.

Mr. Bethell's address is printed in full in this issue. His remarks were greeted with cheers at their conclusion and were replied to by Mr. F. B. Evans, Jr., president of the Philadelphia Society, and Mr. J. E. Boisseau, president of the Baltimore Society, and by Mr. Gordon.

Mr. Schmidt then delivered an address, "The Triumph of Science," to those present at the meetings in the three cities, which was followed by motion pictures.

Mr. Vail Arrives

The order of the program was slightly changed owing to the wireless station at Arlington being in demand by the Government, and the wireless demonstration was, therefore, given in advance of the transcontinental. While the wireless was being "hooked up," Mr. Vail arrived with his guests, Dr. Nicholas Murray Butler, president of Columbia University, and Mr. John G. Millburn. Mr. Vail received a tremendous ovation as he proceeded up the long aisle to the demonstration table.

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Telephone Demonstrations

The chairman then announced the wireless and transcontinental demonstrations and turned the proceedings to Mr. J. J. Carty. Mr. Carty introduced Capt. W. G. H. Bullard, Chief of the Bureau of Communication, U. S. N., who expressed his great pleasure at being allowed to address so many telephone men at one time. He stated that he was speaking from his apartments in the northwest part of Washington, D. C., his voice coming over the wire to Arlington, thence by wireless to the receiving station on the Western Electric Company building in New York, thence by wire to the gatherings in New York, Philadelphia, and Baltimore, almost returning to its starting point in Washington. His remarks were very felicitous and highly complimentary to the genius of the Bell System. Following him, Mrs. Bullard held a brief conversation with Mr. Carty and then with Mr. Vail.

Next came the strains of "The Star-Spangled Banner" from the wireless station at Arlington, which brought the diners to their feet in an outburst of enthusiasm, and during this a motion picture of the stars and stripes was thrown on the screen and an enormous American flag was dropped suspended from the ceiling of the armory.

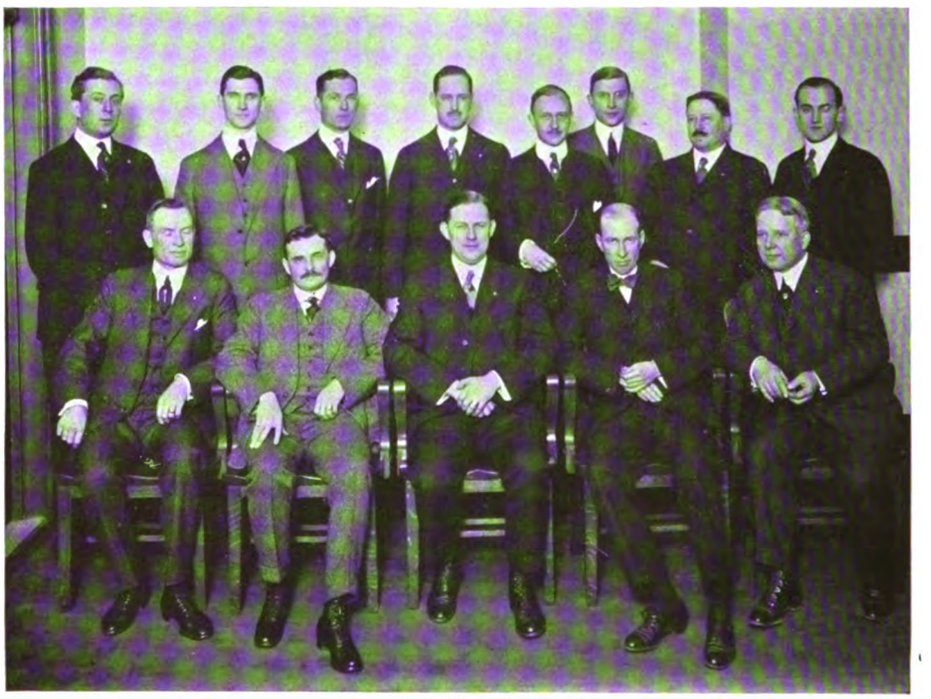
This concluded the wireless demonstration, which was immediately followed by a telephone excursion over 22,000 miles of wire to the four corners of the United States, conducted by Mr. Carty, who called the various switching stations to Portland, Me., Jacksonville, Fla., San Diego, Cal., Seattle, Wash., and San Francisco.

Four Societies

One thousand members of the San Francisco Telephone Society were gathered at a similar meeting, and ready for the call when it came. For the rest of the evening the four societies, in New York, Philadelphia, and Baltimore on the Atlantic Coast, and in San Francisco on the Pacific, conducted a joint meeting, in which 6,350 employees of the Bell System participated. Speeches, songs, choruses, instrumental music, and cheers, were exchanged, and the telephone received such a test as had never been given it before.

In New York the control room was in charge of Mr. J. G. Truesdell and his most efficient and obliging associates, and the success of the whole demonstration depended upon them.

Another feature which added to the great interest of the demonstration was the enormous map suspended on one side of the hall, and on which the routes taken in the passing of the calls were illumined by electric light from point to point as the calls progressed to the different cities.



GENERAL COMMITTEE IN CHARGE OF THE TELEPHONE SOCIETY DINNER AND TELEPHONE DEMONSTRATION, MAY 19, 1916

Left to right: Seated 1. A. L. DuBois; 2. G. G. Volkmar; 3. H. W. Casler; 4. J. H. Gordon, Jr.; 5. J. D. Newman. Standing 1. W. F. Schmidt; 2. J. L. Turner; 3. G. McLeod; 4. R H. Street; 5. G. V. W. Pelz; 6. P. W. Eldridge; 7. A. W. Deas; 8. H. G. Stokes.

The full program after the dinner was as follows:

PROGRAM

8.40 P.M. Brief business meeting.

Blue Bell Glee Club.

Exchange of greetings: Mr. J. H. Gordon, Jr., vice-president, The Telephone Society of New York. Mr. F. B. Evans, Jr., president, Philadelphia Telephone Society. Mr. J. E. Boisseau, president, Baltimore Telephone Society. Greetings by Mr. U. N. Bethell, president, New York Telephone Company, to members of Philadelphia, Baltimore, and New York Telephone Societies.

Address to the three societies: "The Triumph of Science," by Mr. W. F. Schmidt, followed by motion pictures.

9.25 P.M. Wireless, followed by Transcontinental Telephone Line Demonstration; Mr. J. J. Carty, chief engineer, American Telephone & Telegraph Company, presiding.

Roll call of wire chiefs in principal cities of the United States.

Exchange of greetings between Mr. J. W. Gilkyson, president, San Francisco Telephone Society, and Mr. Gordon, New York, Mr. Evans, Philadelphia, and Mr. Boisseau, Baltimore.

Songs: "Hello, 'Frisco" from New York; "Hail, Pennsylvania" from Philadelphia; "Maryland, my Maryland" from Baltimore; "Hello, New York" from San Francisco.

Transcontinental cheers from New York and San Francisco.

Exchange of greetings between: Mr. T. N. Vail, president American Telephone and Telegraph Company, and Mr. U. N. Bethell, president New York Telephone Company, at New York, and Mr. Geo. E. McFarland, president Pacific Telephone and Telegraph Company, at San Francisco.

Mr. H. F. Thurber, vice-president New York Telephone Company, and Mr. M. H. Buehler, vice-president and general manager Chesapeake and Potomac Telephone Company at Baltimore, and Mr. H. D. Pillsbury, vice-president Pacific Telephone and Telegraph Company at San Francisco.

Mr. F. H. Bethell, vice-president New York Telephone Company, and Mr. L. H. Kinnard, vice-president Bell Telephone Company of Pennsylvania, at Philadelphia, and Mr. J. C. Nowell, general manager Pacific Telephone and Telegraph Company, at San Francisco.

Songs: "California and You" from San Francisco; "Billy Penn, the Founder of the City" from Philadelphia; "Baltimore" from Baltimore; "Stein Song" from New York.

Banjo Solo: "Swing Low, Sweet Chariot" from Baltimore.

Cornet Solo: "I Love You, California" from San Francisco. Roar of the Pacific Ocean with motion pictures.

Songs: "Memories" from San Francisco. "Transcontinental Farewell" from New York.

Good-night roll call.

One number not on the program was a talk between Dr. Nicholas Murray Butler and President McFarland, of the Pacific Telephone & Telegraph Company, of San Francisco, in which Dr. Butler took occasion to say that he had long considered the telephone "the most astounding thing in the whole world."

The evening's program concluded with the singing of "America," led by the Blue Bell Glee Club and accompanied by the Blue Bell Orchestra, all standing and waving their Blue Bell flags, with which everyone present had been furnished.

But the greatest demonstration was not so much the wireless and transcontinental telephony, as the meeting together under one roof of almost the entire membership of The Telephone Society of New York, and their spirit of loyalty to the organization that made the telephone demonstration a possibility.

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The Telephone Society of New York Hudson, Central, and Western Sections

Hudson

THE thirtieth meeting was held April 28, in Van Vechten Hall, Albany.

Mr. C. H. Teegarden, district plant superintendent, Schenectady, spoke on "Telephone Protectors and Protection." His talk was illustrated with apparatus especially erected for the purpose. In his demonstrations Mr. Teegarden brought out particularly the injuries to the plant that will result when protective apparatus is improperly installed. He illustrated the various dangers that employees must guard against to avoid personal injury.

The talk developed a lively discussion that was participated in by Messrs. W. Hills, E. H. Greenleaf, F. E. Dunphy, R. P. Bunyan, C. A. McCord, T. White, M. R. Bradt, W. H. Sill, P. J. Lumley, and G. G. W. Green. Representatives of various chapters of the section located outside of Albany asked that the talk be repeated before their respective chapters for the benefit of those who were unable to attend the Albany meeting.

A rising vote of thanks was tendered Mr. Teegarden for his talk and for the time he gave up in preparing the apparatus with which the demonstrations were given.

The season will close with a dinner at Keeler's Hotel, Albany, on Thursday evening, June 8, when reports of officers will be given and the annual election will take place.

Central

ELMIRA

A DISTRICT meeting at Elmira was held March 31, at the Women's Federation Building and was largely attended by members from the Elmira and Binghamton districts. Mr. D. P. Bone was chosen chairman of the meeting and presided over the following program:

1. Selection by quartet.
2. Paper by Mr. W. C. Sexsmith.
3. Whistling solo by Miss Anna Stannard.
4. Paper by Mr. L. M. Smith.
5. Vocal solo by Mr. H. J. Love.
6. Paper by Mr. W. M. Hollenbeck.
7. Chorus—America.

The subject of all three papers was "What Your Departments Are Doing and Can Do for Our Department."

After the reading of the various papers Mr. F. J. Chesterman and Mr. H. H. Kennedy, of Syracuse, gave very fine talks to the Society.

The attendance at this meeting was very gratifying, and it is hoped that the practice of holding district meetings may be continued and that they may be held more frequently hereafter.

The monthly general meeting was held April 19, in the Auditorium of the James Exchange Building, at Syracuse, with nearly two hundred members present.

An excellent musical program was provided by the Blue Bell Orchestra, which now has about twenty members, and the Blue Bell Quartet.

Mr. H. F. Thurber, the speaker of the evening, delivered a most delightful informal talk covering conditions in general throughout the Eastern group of Bell Companies.

Following the meeting, an informal reception was held, all of the members being given an opportunity to shake hands with Mr. Thurber.

The Central Section held two very enthusiastic meetings during May, one at Utica on the evening of May 5, and the annual meeting of the Section at Syracuse, on May 18.

UTICA

A lecture illustrated by motion pictures of the Transcontinental Telephone Line was delivered in the ballroom of the Hotel Utica by Mr. G. A. Leimbach, special agent of the Advertising Department, New York City, and was followed by an excellent musical program.

Over 200 employees of the Utica District were present.

1. Vocal solo, Mr. L. Clark, Little Falls N. Y.
2. Piano solo, Miss Ella Thurston, Syracuse.
3. Vocal solo, Miss Bessie Thomas, Utica. Mr. W. R. Thomas, Accompanist.
4. Recitation, Miss Mildred Boff, Utica.
5. Vocal solo, Miss May Durr, Utica. Miss Marguerite Durr, Accompanist.
6. Piano solo, Miss Alice I. Redner, Utica.
7. Vocal solo, Miss Nellie Connors, Rome.

SYRACUSE

The meeting held in Syracuse on May 18 was the final meeting for the year. After the reading of annual reports, etc., officers for the coming year were elected as follows:

Chairman.....Mr. E. M. Gladden
Vice-Chairman.....Mr. F. J. Chesterman
Secretary-treasurer.....Mr. A. M. Cartter
Chairman of Finance Committee
Mr. L. A. Wilcox
Chairman of Papers and Meetings Committee
J. P. Bernard
Chairman of Membership Committee
Mr. D. J. O'Brien

No regular paper was offered at this meeting, but instead several very interesting exhibitions of first-aid methods and knot-tying were offered by a troop of Boy Scouts and by members of the Plant Department throughout the Division.

Cash prizes were offered in knot-tying contests and were won by the following teams:

1. A. R. Larkin, toll section lineman, and George Jeffords, foreman construction gang, Oswego, N. Y.
2. Earl Harris and Daniel Ameigh, linemen Construction Department, Syracuse, N. Y.

A team composed of F. A. Ridall, wire chief, Elmira, and T. B. Wheeler, wire chief, Waverly, were tie for second place, but the first mentioned team was awarded the prize on the toss of a coin.

First-aid contests were won by a team composed of Messrs. E. E. Harris, Elmer F. Pelotte, and Daniel Ameigh, all linemen in the Construction Department, Syracuse, N. Y.

Second prize in this contest was awarded to a team composed of Messrs. C. W. McKinney, wire chief, Ithaca; Frank Drake, wire chief, Ithaca; Frank Drake, wire chief, Owego; and T. B. Wheeler, wire chief, Waverly.

The program of entertainment was concluded with a demonstration by "Houdini," otherwise known as P. J. Morgan, installer, Syracuse, N. Y.

The winners of the knot-tying contest took ten minutes to tie Mr. Morgan to a chair, and he required but four minutes to release himself.

The meeting did not adjourn until a late hour, and was considered one of the most enjoyable meetings held during the past year.

Western

BUFFALO

ONE of the most successful meetings of the Section was held at Perkins' Memorial Hall, Y. M. C. A. Building, Buffalo, on Thursday, April 13.

Mr. J. S. Kennedy, secretary of the Employees' Benefit Fund Committee, was the speaker of the evening and told of the wonderful work carried on by the Benefit Fund Committee. As the subject was one of particular interest to all employees of the Company, an invitation was extended to the ladies to be present.

The thirty-sixth meeting of the Section was held in Buffalo on May 10, 1916, in the Telephone Building.

The nominating committee presented the following ticket for officers and members of the executive committee for the following year:

A. F. Neal, chairman; C. H. Thomas, vice-chairman; P. W. Heffenstein, secretary and treasurer.

Executive committee: F. C. Saunders, Allegany County Telephone Company; A. R. Roberts, New York Telephone Company; J. Lillich, New York Telephone Company; C. W. Little, New York Telephone Company; H. I. Dodson, New York Telephone Company.

The candidates were unanimously elected, the secretary being instructed by acclamation to cast one ballot for the entire ticket.

The speaker of the evening was Mr. C. A. Spaulding, division commercial

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manager, Western, who spoke on what is now the most absorbing topic to employees in the Western Division: "The Progress of the Proposed Telephone Merger."

Mr. T. P. Sylvan, assistant to the vice-president, spoke very briefly on the same subject.

About 275 were present, which included a number of women employees of the several departments.

ROCHESTER

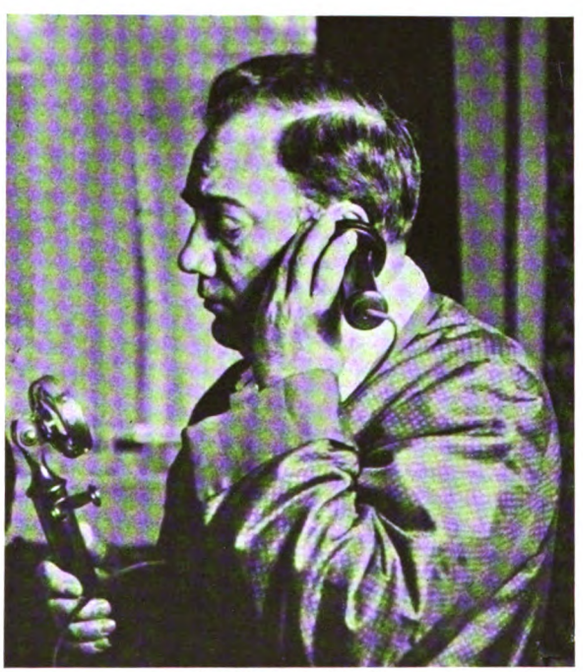
THE thirtieth meeting of the Chapter was held in the Telephone Building, No. 95 North Fitzhugh street, Rochester, on April 14.

Dr. Montgomery E. Leary, superintendent of the Iola Sanitarium, gave an extremely interesting talk on the prevention and cure of tuberculosis, giving as his subject, "Preparedness." In a very concise manner he outlined the necessity of preventing this dread disease, and showed how to combat it successfully.

Mr. J. S. Kennedy, secretary of the Employees' Benefit Fund Committee, gave a synopsis of the work of the Committee, citing many individual instances of the practical aid extended by the Company to its employees in cases of sickness and accident.

Caruso Sings Over the Transcontinental Line

ENRICO CARUSO sang from Atlanta, Ga., over the Transcontinental Line to the San Francisco Press Club at 6.30 (Central Time), on Sunday morning, April 30. Fifteen hundred San Franciscans were gathered for a "Ten Years After" celebration to mark the great progress of San Francisco since the fire of 1906. The feature of the celebration was the part played by the Transcontinental Line. Senator Phelan of California spoke from his residence at Washington, giving a message from President Wilson; Secretary Lane from his residence greeted his old newspaper friends in San Francisco; from the rooms of the National Press Club in Washington Mr. Theodore Tiller, president of the National Press Club, talked with the president of the San Francisco Press Club, and Mr. Frederick W. Steckman, publicity manager of the Democratic National Committee, said in part: "When I became publicity director for the Democratic party I assured the leaders I would make my voice heard across the continent, and now, thanks to you, I have accomplished it."



Courtesy Scenic Film Co.

Enrico Caruso in Atlanta, Ga., Singing Over the Transcontinental Line to San Francisco

Then from Atlanta came the voice of the greatest tenor in the world, heard by the members of the Press Club and the speakers at Washington as well as the large audience in San Francisco. Mr. Caruso was in his rooms at the Georgian Terrace in Atlanta. After conversing a few minutes with those at the San Francisco end of the line, Caruso sang "The Rosary" in English. A moment of complete silence followed the last notes of the song and after this "perfect tribute," a burst of applause and "bravos" came from San Francisco and Washington. As an encore Caruso sang an Italian love song and when the applause for this had died away, the victrola was placed near the telephone transmitter in San Francisco and Caruso's own voice came back to him in a song from "Pagliacci."

Moving pictures were taken of Caruso singing over the wire, his last performance in this country this season, for the news weeklies.

If put to the pinch, an ounce of loyalty is worth a pound of cleverness.—*Elbert Hubbard.*

Appreciation

SO great was the success of the General Committee of Arrangements, in connection with the annual meeting, of the Main Society that the following letter was sent to Mr. Casler:

May 24, 1916.

Mr. H. W. Casler, Chairman, General Committee in Charge of the Transcontinental Demonstration and Dinner, etc.

DEAR MR. CASLER: On March 2 the executive committee of the Telephone Society of New York appointed you chairman of a special committee to arrange and conduct a Transcontinental Telephone Demonstration and dinner in connection with the annual meeting of the Society on May 19, 1916.

On behalf of the officers and executive committee and the entire membership of the Society, I wish to express to you and all the chairmen of the sub-committees reporting to you, all the members of those committees, and all others who assisted, our most enthusiastic and unqualified appreciation and commendation for the remarkable and successful performance of the responsibilities entrusted to you.

The intelligent conception of the opportunity before you, and the thorough and indefatigable effort which was made in carrying out this conception, resulted in giving the members of the Telephone Society the largest and in every respect the most remarkable evening's entertainment in the history of the Society, or any similar organization.

The labor involved was tremendous, but it was a labor of love, and testified in the highest degree to the spirit which animates the entire organization.

Your greatest satisfaction will come from the consciousness that the work was perfectly performed, and it is but a slight tribute that I can render you in adding this testimonial on behalf of the Society.

Yours very truly,
J. D. NEWMAN,
Secretary-Treasurer.

Mr. Casler replied:

May 25, 1916.

Mr. J. D. Newman, Secretary-Treasurer, the Telephone Society, No. 15 Dey Street, New York City.

DEAR MR. NEWMAN: Please accept my thanks for your cordial note of the 24th inst., expressing appreciation on behalf of the officers and members of the Executive Committee and membership of the Telephone Society of New York for what the committee, of which I had the honor to be chairman, did last Friday night.

On behalf of the General Committee in charge of the dinner and demonstration, I wish to assure you that it was a labor of love and "spirit of service" that prompted everyone in our special committee organization of nearly four hundred persons to do his part. May 19, 1916, will go down in telephone history as a memorable occasion and it is a great satisfaction to the members of our committee to know that the affair was a big success.

Much of the credit for this success, however, belongs to those telephone employees in Philadelphia, Baltimore, San Francisco, in the control rooms, and all along the several telephone lines in the important cities where the roll was called by Mr. Carty, who coöperated so splendidly with the New York committee in formulating and executing the plans which resulted so satisfactorily.

Yours very truly,
H. W. CASLER,
Chairman, General Committee on Arrangements.

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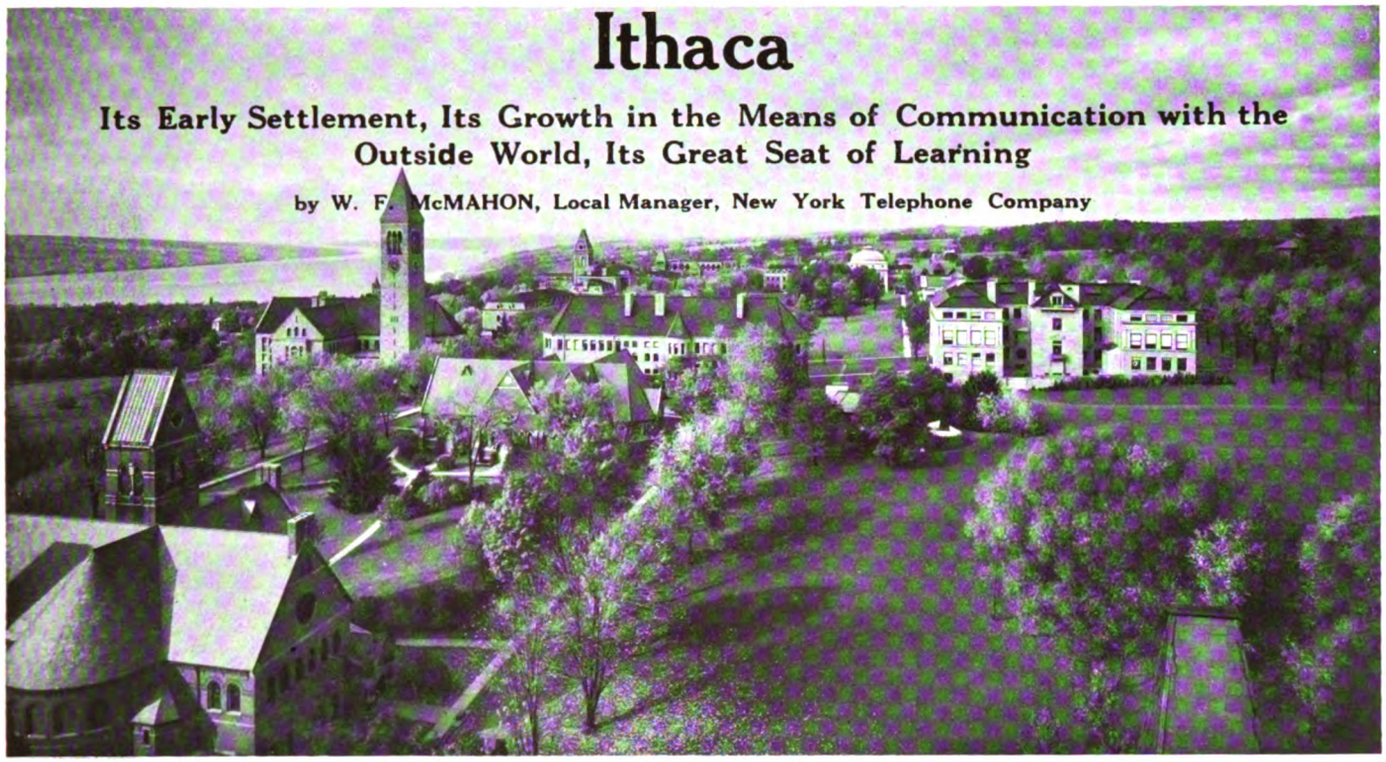
Ithaca

Its Early Settlement, Its Growth in the Means of Communication with the Outside World, Its Great Seat of Learning

by W. F. McMAHON, Local Manager, New York Telephone Company



Main Quadrangle of Cornell University

ITHACA, so well known as the home of Cornell University, is worthy of note also as being one of the most beautiful and picturesque cities in the State of New York. Clustered on a level plain and creeping up the sides of the adjacent hills at the head of Lake Cayuga is this city with its beautiful drives, walks, hills, waterfalls, streams, gorges, and ravines.

It seems a far cry from this up-to-date city with its great seat of learning, to that first little settlement of three families, numbering about twenty persons, established back in the year 1789.

The first white persons known to have visited this spot were two Jesuit Fathers who came here in 1656 and remained with the Indians nine months. A mission was later established at Cayuga, N. Y., in 1668 and continued until 1684.

During the next hundred years, the Indians dwelt here, building villages along the lake and bringing considerable land under cultivation, but in September, 1779, these villages were destroyed by the Army of General Sullivan. However, the Indians seemed to hold no enmity against the first settlers for this, as, we are told, they proved friendly to them and gave them substantial assistance. This assistance must have been very necessary to the pioneers as there was practically no communication with the outside world—it had taken them a month to travel from Kingston to Owego which was a settlement of only three families, and owing to the lack of roads, 19 days to travel from Owego to their final destination.

In 1791-93, great turnpikes following mainly an easterly and westerly direction were pushed forward into the wilderness and afforded the pioneers means of more frequent communication with the older settlements. The precise date of the first road across the valley is not known, and the only means of communication between the early settlers on the easterly and westerly sides of the valley was by a circuitous route substantially what is now the Five Mile Drive.

The first wagon road led to Oxford on the Chenango River and was completed in 1795; the second one, to Owego, was finished in 1802. In 1804 the Susquehanna and Bath Turnpike was built, through the present towns of Caroline, Dryden, Ithaca, and Enfield.

The Owego and Ithaca Turnpike Company was incorporated in 1807 and the road finished in 1811, the year which also saw the completion of the road to Geneva by the Ithaca and Geneva Turnpike.

On December 15, 1819, the Cayuga Steamboat Company was organized, but it was not until May 4, 1821, that the "Enterprise," the first steamboat on the lake, was finished. The trial trip took place June 1, 1821, with a party of 150 ladies and gentlemen on board. The "Enterprise" was 80 ft. x 30 ft. and was of 120 tons burden. She carried a 24 horsepower engine.

Up to the year 1834, stage coaches were the only means of conveyance to the navigable streams, and we can judge of the length of time consumed in getting news and in traveling from other parts of the country from the following items which appeared in the American *Journal*.

Under date of December 15, 1819:

Through the politeness of a gentleman by the Newburgh Line we received on Saturday morning, a copy of the President's message delivered on Tuesday at 12 o'clock. It was received in New York in 18 hours and a half from Washington, a distance of 240 miles, was there republished, and (allowing for the time of reprinting and delay in New York) was about three days from Washington City to this place—a distance of 480 miles—a rapidity of communication seldom surpassed in any country.

Under date of June 7, 1820:

The *Enterprise* is connected with the line of stages from Newburgh to Buffalo and thus furnishes to travelers from New York and others going west, one of the most expeditious and pleasant routes in the State. The stage runs from Newburgh to this village in two days. Thus travelers may leave New York at 5 o'clock P.M. in the steamboat, the second day arrive at Ithaca, go on the steamboat *Enterprise* the same night, receive good accommodations and rest in comfortable berths during the passage; resume the stage the next morning at Cayuga Bridge, and the same night arrive at Buffalo, making the whole route in three days—one day sooner than it is performed by way of Albany.

These facilities attracted considerable attention at that time. Trade to Ithaca, which became an incorporated village on April 2, 1821, and the possibilities presented of more rapid advancement with great facilities of communication, promoted the project of a railroad to Owego. This became an accomplished fact in April, 1834. The road was 29 miles long and had two inclined planes. It was operated exclusively by horse power for six years.

The year 1836 was a period of great speculation and has been referred to as the "foamy period" of Ithaca's history.

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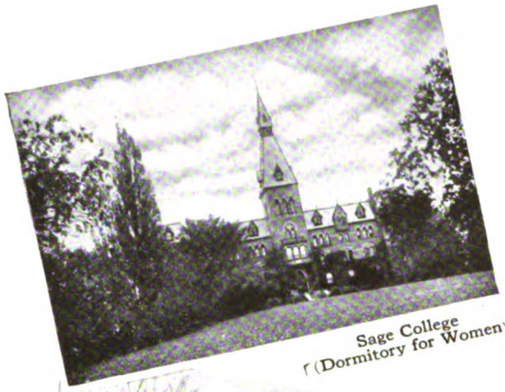
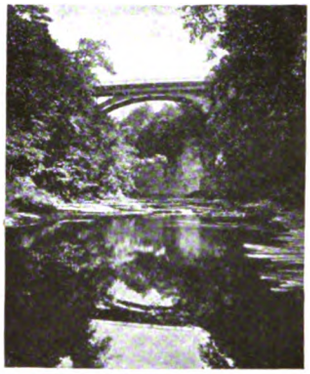


Sage College
(Dormitory for Women)



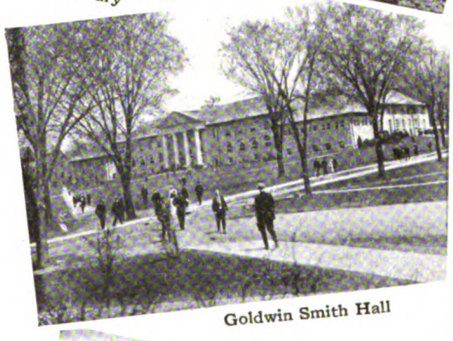
Bridge Over North Gorge,
Fall Creek

Sibley College

Campus Scene, Boardman
Hall on Left and the
Library

Schoellkopf Memorial Training House, also Portion
of Athletic Field and Stadium

Morse Hall and
Franklin Hall

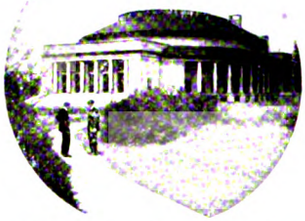


Goldwin Smith Hall

McGraw Hall and White Hall

Rockefeller Hall

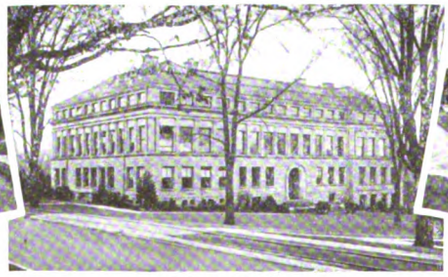
Prudence Risley Hall
(Dormitory for Women)



Bailey Hall (the New Auditorium Seating About
2,500 People)

Lincoln Hall

New York State College of Veterinary
Medicine



Stimson Hall

Home Economics, Agronomy, Roberts
Hall and Dairy

CORNELL UNIVERSITY GROUNDS AND BUILDINGS

[We are indebted to Cornell University and the Ithaca *Journal* for all the illustrations in this article, except the last.—Ed.]

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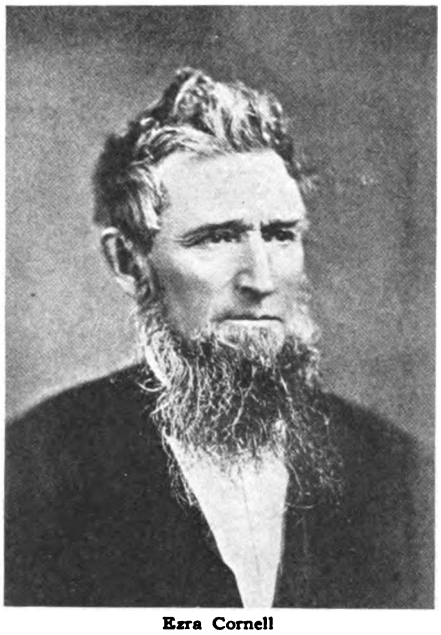
Land increased fabulously in price and whole farms were laid out in lots. Banking institutions, railroads, and canals multiplied in brains and on charts; several of the first were formally organized but never proceeded to business. However, this boom lasted only a short time and although Ithaca did not become so great as was expected, it settled down to a steady, healthful growth.

With its railroad and steamboat lines it became the central shipping point for all this region, but the failure of the Erie and New York Central Railroads and the Erie Canal to touch Tompkins County was the main drawback to its greater prosperity.

The opening of the Ithaca & Athens Railroad and the Ithaca & Cortland Railroad in 1871, the Geneva and Ithaca Railroad in 1873, and the Cayuga Lake Railroad in 1874, affording desirable transportation facilities, gave it another



Ezra Cornell

first telegraph line, erected between Baltimore and Washington. Cornell became much interested in the new invention, and his mechanical experience and ability were of material assistance to Morse, whom Cornell "greatly aided in adjusting the practical features of the telegraph." The telegraph proved to be an outlet for Cornell's inventive genius. He later invented a plow for preparing trenches for underground wires, and made great improvements in the form of magnet used for telegraphy. It was found impossible to make the first telegraph line an underground circuit as had been Mr. Morse's original idea, and the method of insulating the aerial wires at the poles was Mr. Cornell's plan. He also suggested the method later adopted of pins and "glass bureau knobs" on the cross arms.

Cornell was sent with Mr. O. S. Wood to New York City in 1845 to demonstrate the telegraph and obtain capital

New Ithaca High School, Erected 1912-14

The People's Hospital, Erected 1912

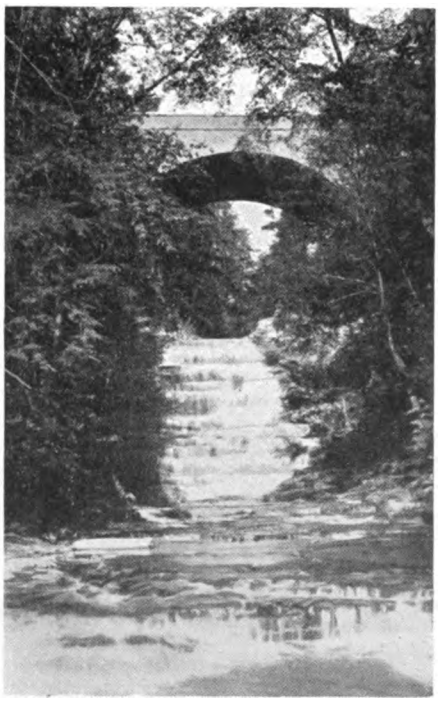
Taughannock Falls, Highest Single Fall East of the Rocky Mountains, with 200 Foot Walls Rising on Either Side.

slight impetus and it again began to move forward.

During this time a man had been living and working among the people who was destined to become a great leader. Coming to Ithaca in 1828 as a youth of 21, Ezra Cornell went to work in a machine shop at $8 a month and his board. His early education had been received from his father, who, though a potter by trade, taught district schools in the winter. He was one of a family of eleven children, and early in life showed great determination and ambition for work.

In 1840 we find him so situated that he was able to purchase the right for a patent plow for the States of Maine and Georgia, and he traveled through those States selling it.

In 1844 Ezra Cornell was found at the plow factory in Albany, N. Y., by Hon. F. O. G. Smith, formerly a member of Congress, and partner of Mr. Samuel F. B. Morse in the early days of the magnetic telegraph. Smith drew Cornell to Washington, where he was made superintendent of construction for the



Sage Bridge, Entrance to Cornell Campus, Over Cascadilla Creek

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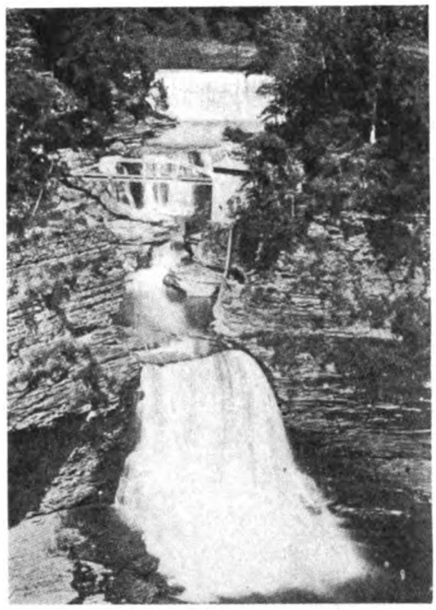


The Famous Triphammer Falls

for the construction of a line from New York to Philadelphia. The stock was not subscribed readily by the unconvinced New York financiers, but friends of the telegraph took it up in small quantities. Cornell subscribed $500, the beginning of his financial interest in the telegraph from which he eventually amassed a fortune that made possible the founding of Cornell University. For many years Cornell was active in the construction of other telegraph lines, and in 1855 was a prime mover in the consolidation of rival telegraph interests under the name of the Western Union Telegraph Company, the name suggested by Mr. Cornell, who was a large stockholder and one of the first board of directors.

Great wealth flowed in from his investments in the telegraph, and this Cornell spent freely for the benefit of Ithaca.

He was elected Assemblyman in 1861 and State Senator in 1864. When the new Legislature met in 1864, Ezra Cornell, of Ithaca, and Andrew D. White, of Syracuse, were among the new members. Mr. White was made Chairman of the Committee on Public Instruction. Almost the first measure which came before the Committee was a bill to incorporate the Public Library of Ithaca to which Mr. Cornell proposed to give $100,000. It was through this means that Mr. White and Mr. Cornell became friends, and it is to this friendship that Cornell University owes its being.

Cornell University was incorporated by the Legislature of the State of New York on April 27, 1865, and to its endowment and maintenance Ezra Cornell donated almost a million dollars. How he also added to this endowment fund by his farsightedness and his indefatigable efforts in buying up "land scrip," the proceeds from the sale of which were to accrue to Cornell University, is a long story, but the fact that up to August, 1915, the University had realized over five million dollars on it shows he was eminently successful in his undertaking.

The University was opened October 7, 1868, with 412 students and Andrew Dixon White as its first president. Ezra Cornell's dream of "An institution where any person can find instruction in any study" has been fully realized.

Cornell stands as one of the foremost Universities. It has to-day a student body of 6,000 coming from every part of the world; it has lands, buildings and equipment with an estimated value of over eight and one-half million dollars. Its productive and other funds amount to over fourteen million dollars.

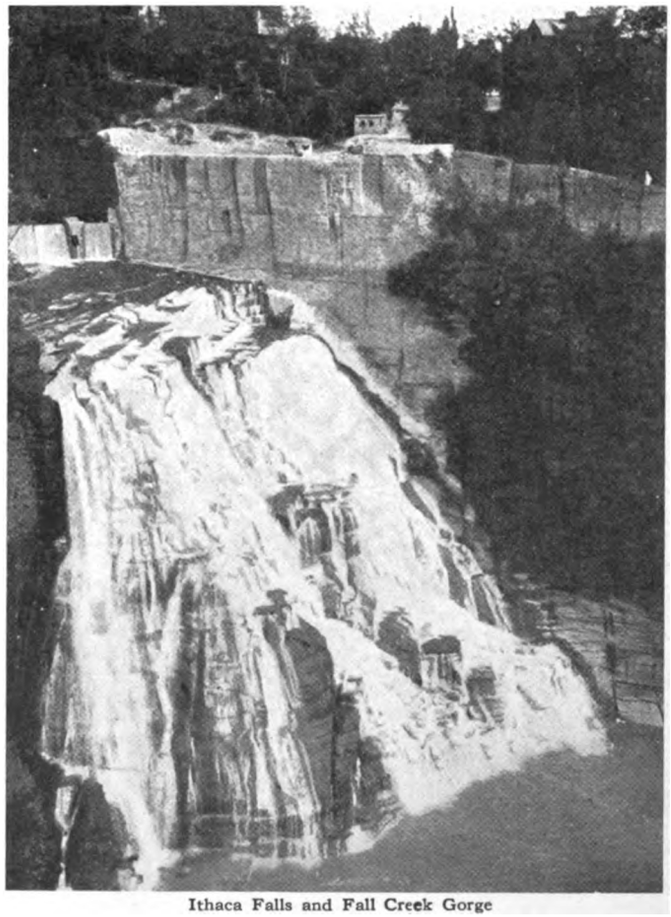
It includes the following colleges:

The Graduate School.

The College of Arts and Sciences.

The College of Law.

The Medical College (including the Medical College in New York City and the Ithaca Division).



Ithaca Falls and Fall Creek Gorge

Old Hydraulic Power Plant in Fall Creek Gorge

The New York State Veterinary College.

The New York State College of Agriculture.

The New York State College of Architecture.

The New York State College of Civil Engineering.

The Sibley College of Mechanical Engineering and Mechanic Arts.

The School of Education.

The area of the main campus has increased from 200 to 351 acres. In 1915 over 1,000 were graduated as compared to 8 in 1869.

Andrew Dixon White was succeeded by Charles Kendall Adams as president. He in turn was succeeded by Jacob Gould Schurman, who still serves in that capacity.

Ithaca is now a well equipped city, covering 3,557 acres of land, with a population of 16,759 exclusive of the University students. It has fifty-five miles of streets, sixteen of which are paved. It has churches, schools, clubs, theaters, and fraternal organizations providing for all the needs of social and intellectual life. Banking facilities are ample and there is a Rotary Club, Board of Commerce, and efficient and well managed municipal departments. Ithaca has a City Hospital, and the sick from the University are cared for at the University Infirmary. Exceptional freight facilities and car service to important points are available as Ithaca is connected with the through lines of the Lehigh Valley Rail-

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road and two of its branch lines, and with the systems of the Delaware, Lackawanna & Western Railroad and the Central New York Southern.

It is estimated that 175,000 persons visit Ithaca annually and there are adequate hotel and rooming accommodations for all.

Three daily newspapers appear in Ithaca, including a college daily published during the college year; two weeklies, including the Alumni News; also numerous monthly college publications.

Among the products of its industries, many of which have a national reputation for excellence, are music rolls, silent power transmission chains, clocks, cement, brick and tile, advertising signs and novelties, evaporated milk and cream, table salt, wrapping paper, rowing shells, well drilling machinery, shot guns, aeroplanes, military tractors, and moving picture films.

The largest producer of serial motion pictures has utilized much of Ithaca's beautiful scenery for films that are shown all over the country so that even the newest industry is well represented.

In tracing the history of a community we cannot but note the close relation of its growth as compared with its means of communication. We find after the few first families made the settlement that others followed as soon as means of travel became easier. Having once established themselves, we find them perfecting other means of communication.

As to Ezra Cornell great credit was due in perfecting and extending the telegraph system, so to a member of the Cornell faculty, Prof. W. A. Anthony, was due much credit in the introduction of the telephone.

In the Days of the Stage Coach

In 1878, Professor Anthony, who had been making experiments in telephony, and Capt. W. O. Wyckoff, formed a company for the operation and extension of a telephone system.

The first exchange was located on the top floor of the Rumsey Building on North Tioga street. The switchboard, a very crude one, was equipped with annunciator drops with parallel bars across the top for connecting subscribers, and was set on a wooden table with iron legs. The first circuits were grounded and the wires were attached to the tops of the buildings. The majority of the subscribers talked through the receivers, but a few had Blake transmitters. Professor Anthony and Captain Wyckoff retained the management of the company until January, 1883, when it was purchased by the New York & Pennsylvania Telephone & Telegraph Company and the office moved to the Morrison Block on the same street. This purchase made Ithaca, itself an exchange of only 104 subscribers, a unit in a system containing more than 4,200 miles of telephone wire and 3,700 complete sets of instruments; the telephone facilities thus afforded serving the interests of 900,000 people.

Many improvements to the service were then made. A new Williams switchboard with a local and a toll position was installed, the operating sets were a Blake transmitter and a head receiver. Two more positions were added in 1893 and in August, 1902, the magneto switchboard was discontinued and the subscribers connected to a new eight-position common battery board in the Company's new building at 121 West State street. Four positions have since been added, making a total of twelve in the present board.

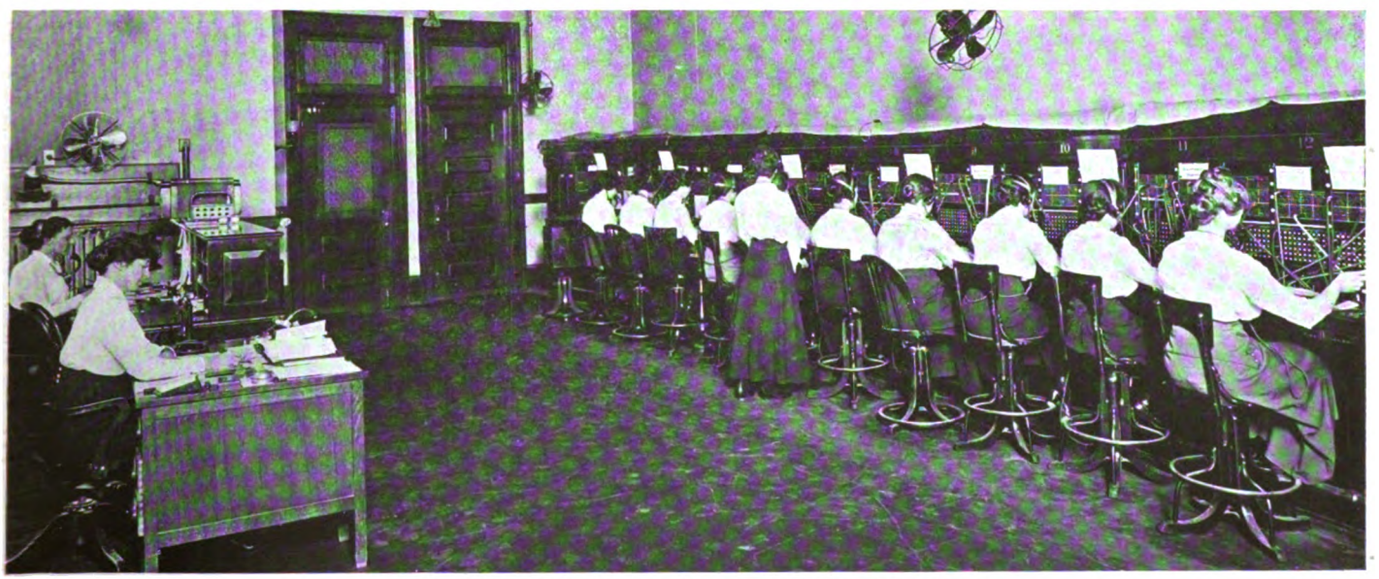
In January, 1911, the space used by the Commercial Department was remodeled into retiring and locker rooms for the use of the operators and the commercial office was moved to rented quarters at the corner of State and Aurora streets.

The operating force in 1887 consisted of 2 girl operators (day) and 1 man operator (night). The present force of girls necessary for the conduct of the business is 1 day and 1 night chief operator, 2 information operators, 5 toll and 14 local operators.

The comparative station growth for a period of thirty-three years is as follows:

January, 1883	104 stations
January, 1902	850 stations
January, 1911	1,624 stations
January, 1916	2,092 stations

In 1909 this exchange was merged with the New York Telephone Company, and as part of the great Bell System has all the advantages of Universal Service.



Portion of New York Telephone Company's Central Office in Ithaca

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Transcontinental Demonstrations

Transcontinental Telephone Demonstration at the Preparedness Dinner of the Chamber of Commerce, Bayonne, N. J., at Elks' Hall, April 13, 1916

Bayonne Chamber of Commerce

A STRIKING feature of the Preparedness Dinner given on April 13 under the auspices of the Chamber of Commerce of Bayonne, N. J., was the very successful demonstration of the Transcontinental Line, which testified to the readiness of the telephone industry to do its part in the event of a national crisis.

Two hundred and twenty-five men were assembled at the Elks' Club, among them Hon. Edward W. Gray, congressman, New Jersey; Hon. George B. McAneny, former president Borough of Manhattan; Hon. Howard E. Coffin, chairman of Committee on Industrial Preparedness of the Naval Consulting Board; Hon. J. Spencer Smith, president Board of Commerce and Navigation, State of New Jersey; Rev. Peter E. Reilly; Hon. DeWitt Van Buskirk, president Bayonne Chamber of Commerce.

Mr. Leimbach delivered the address on "The Triumph of Science," and Mr. J. G. Orr, local commercial manager, acted as master of ceremonies.

The following persons spoke over the Line: Hon. DeWitt Van Buskirk and Mr. Warren Manley, district secretary U. S. Chamber of Commerce, San Francisco; Mr. E. A. Zabriskie, vice-president Pacific Coast Borax Company, and Mr. Charles C. Moore, who was president of the Panama-Pacific Exposition; Mr. W. D. Hoxie, vice-president Babcock and Wilcox Company; Mr. Brown, Mr. Lefkins and Mr. Charles C. Moore; Hon. George B. McAneny, and Hon. J. F. Neilan, president State Board of Control, who spoke from his home in Sacramento; Hon. Pierre P. Garven, Mayor of Bayonne, and Hon. Edward P. Rainey, Secretary to Hon. James Rolph, Jr., Mayor of San Francisco.

The usual features of the demonstration, including the roar of the Pacific and the motion pictures of the waves breaking on Seal Rocks, were greeted with spontaneous applause, and at the close of the program President Van Buskirk called for a rising vote of thanks to Mr. Orr and the Telephone Company. The vote was supplemented by three cheers for the Company.

The connection was held for forty-one minutes and the transmission was perfect throughout.

Rockland County Society

ONE hundred and fifty members of the Rockland County Society witnessed a transcontinental telephone demonstration at the fourth annual banquet of the society at the Hotel Astor on April 15.

Mr. Carroll spoke on "The Triumph of Science," and Mr. Rossborough, local commercial manager of Nyack, opened the Line with the usual roll call of wire chiefs. Conversations were carried on between Mr. Fred. W. Snow, president Rockland County Society, and Mr. Warren Manley, U. S. Chamber of Commerce, San Francisco; Hon. A. S. Tompkins, Justice Supreme Court, N. Y., and Hon. Thos. Lennon, Presiding Justice Supreme Court of Appeals, San Francisco; Miss Caroline C. Crawford, manager Star Publishing Company, Nyack, and Miss Nora Leeham, Traffic Department, Pacific Tel. and Tel. Co.; Mr. Wm. A. Redding, president of the Alumni of the University of Pennsylvania and Mr. John J. Barrett; Assemblyman Wm. A. Serven and Judge Tompkins in New York and Mr. G. G. Marsh, in San Francisco; Ex-Senator Geo. A. Blauvelt in New York and his wife and daughter in San Francisco; Judge Tompkins, Mr. James P. Kilby and Mr. Mortimer B. Patterson at New York and Mr. H. G. Bates of the Pacific Tel. and Tel. Co., a former resident of Nyack.

In addition to the conversations, the usual features of the transmission of music and the sound of the waves breaking on Seal Rocks were enjoyed. A pleasing number on the musical

Transcontinental Telephone Demonstration at the Fourth Annual Banquet of the Rockland County Society, State of New York, at Hotel Astor, Manhattan, April 15, 1916

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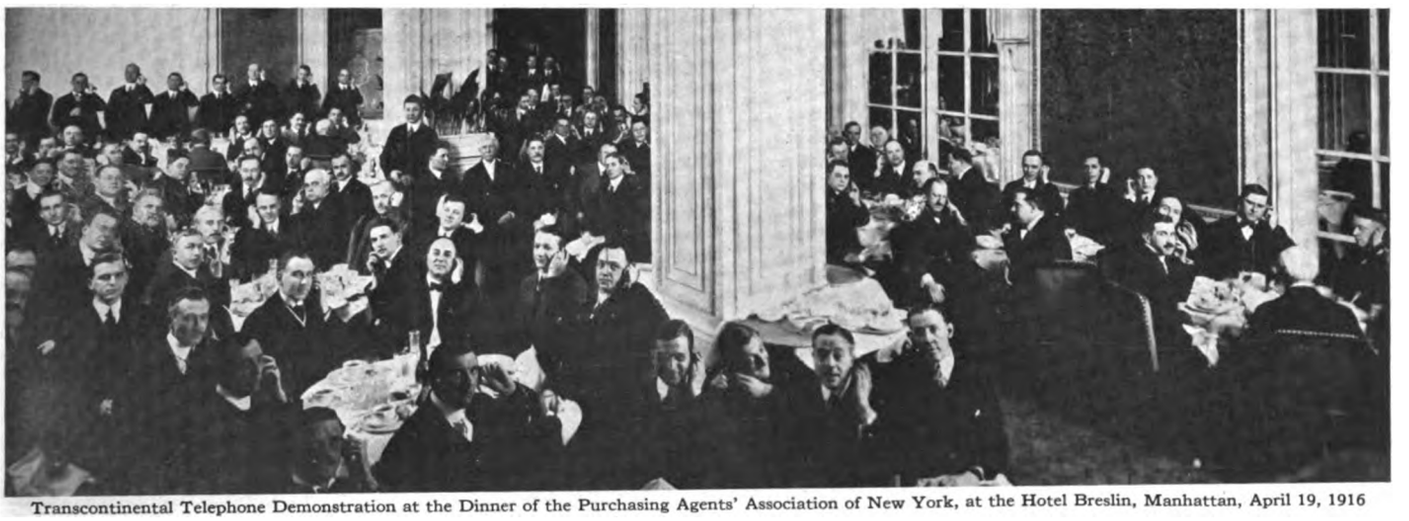

Transcontinental Telephone Demonstration at the Dinner of the Purchasing Agents' Association of New York, at the Hotel Breslin, Manhattan, April 19, 1916

program was a solo by Mrs. Nelson Goodsell, sung over the line from New York.

After the transcontinental demonstration, Mr. Wm. A. Redding delivered an address in which he told of how as a boy he had visited the Centennial Exposition and heard Dr. Bell demonstrate his new telephone. Mr. Redding paid eloquent tribute to the aims, ideals, and accomplishments of the Bell System.

Empire State Society, Sons of the American Revolution

ON April 18, the 141st anniversary of Paul Revere's Ride, the Empire State Society of the Sons of the American Revolution held its annual meeting at the Waldorf-Astoria and witnessed a demonstration of the modern successor to Paul Revere's method of spreading the news, the Transcontinental Telephone.

Approximately two hundred members were present, including Hon. Cornelius A. Pugsley, Ex-Congressman, Peekskill, N. Y.; Mr. Wm. A. Marble, ex-president Merchants' Association; Col. E. Fellowes Jenkins; Mr. Herbert L. Pratt, Standard Oil Co.; Col. Oliver B. Bridgman; Capt. D. H. Moses; Col. Wm. P. Alexander; Major A. B. Ostrander; Dr. Wm. F. Doolittle; Mr. Martin P. Allen; Mr. Chester Jones, vice-president, N. J. Society, S. A. R.; Mr. M. P. Allen; Mr. G. D. Bangs, vice-president Empire State Society, S. A. R.

President Louis Annin Ames made a short address before introducing Mr. Schmidt and Mr. Casler, who gave the demonstration. Mr. Ames said in part:

"When we consider the subject of Preparedness for the national defense and the demonstration we will witness to-night, no more appropriate time could have been selected than this, the 141st anniversary of Paul Revere's Ride on the eve of the Battles of Lexington and Concord.

'Eight hundred men were sent by Gage
For arms at Concord stored;
The famous ride of Paul Revere
Soon spread the news abroad.'"

President Ames then sketched the circumstances of the famous ride and continued:

"That was all very well for that time, when the country was small, and though the attack was sudden, still the farmers were prepared for the first conflict. But to-day, with our population of over 100 millions, occupying over three millions of square miles, and living as we do, in cities, towns, villages, and on remote farms, separated by broad rivers, rugged mountains, and arid deserts, it would be necessary for us, in order to have concerted action in case of an attack by a foreign foe on any portion of our large domain, to use the network of wires which completely covers the country, connecting every State and every community, to its last individual unit. The American Telephone & Telegraph Company will prove to us to-night, in a very practical way, that by a quick, simple, and unfailing means of communication our people could be instantly united in any cause, Preparedness, or what not, and by it, our entire population may be promptly organized for united action in any national movement whether it be for peace, prosperity, or armed protection.

"In comparing the alarm given by Paul Revere and William Dawes 141 years ago this very hour, perhaps, with the means available to-night, it would take much less time to arouse the whole country than it did 141 years ago, judging by the wireless message of Preparedness sent out all over this country on the evening of February 21, which took two hours and a quarter for its delivery. By means of the Bell System that message could have been delivered in much shorter time.

"The Bell Telephone System is distinctly an American achievement and triumph, and its executive head, Theodore N. Vail, Esquire, is an honored member of our own Society."

This was followed by an impressive recitation of Longfellow's "Paul Revere's Ride," by Miss Nellno W. Schrader.

In sharp contrast to the primitive method of communication commemorated thus, came the demonstration of transcontinental telephony, opened as usual with the roll call of wire chiefs, which showed at once how speedily could various parts of the country be brought together.

Conversations then took place between: President Louis Annin Ames and President Chas. H. Blinn, of the California Society; ex-President General Lewis B. Curtis and Judge Morris B. Beardsley, both of Bridgeport, Conn., and President Blinn; Messrs. Curtis and Beardsley and Thos. H. Perkins, Secretary of the California Society; Compatriots Williams and Weeks of the New Jersey Society and Mr. Perkins; ex-President Cornelius A. Pugsley and Compatriot Rawlins Cadwallader; Rev. Dr. Frank Oliver Hall, Chaplain of the Empire State Society, and Compatriot Ernest J. Mott, of the California Society; Vice-Presidents Heffley and Allen and Compatriot Jones and President Blinn; Treasurer General John H. Burroughs and Compatriot John C. Currier of the California Society; President Ames and Mayor S. Parks, Attorney-General Barnes, president of the Utah Society, Judge Albert Smith, Judge Bishop and Mr. Oldfield, all of Salt Lake City.

Transcontinental Telephone Demonstration at the Third Annual Dinner of the Merchants' Association of the Yonkers Chamber of Commerce, Park Hill Inn, Yonkers, N. Y., April 24, 1916

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Transcontinental Telephone Demonstration at the Dinner of the Association of New York Advertising Agents, Hotel Martinique, Manhattan, April 25, 1916

Two verses of "America" were sung in chorus over the Line, awakening great enthusiasm. President Ames expressed the appreciation of the Society in the following words:

"Our Compatriot from New Jersey, a descendant of General Nicholas Herkimer, has had the pleasure of seeing us made happy as we have never been before. He has taken us to the Pacific Coast and back and I would suggest that a motion for a standing vote of thanks be made to Compatriots Vail and Casler, Mr. Schmidt and the American Telephone and Telegraph Company for this delightful evening."

The motion was unanimously carried.

Special credit is due Mr. Chas. A. Hale, of the Secretary's Office, of our Company, a member of the Society whose activity in planning several features of the program did much for its success.

National Association of Purchasing Agents

AT a dinner of the Purchasing Agents' Association of New York, at the Hotel Breslin on April 19, 100 members and guests of the National Association of Purchasing Agents in Chicago and 125 in Los Angeles were connected with the 225 in New York over the Transcontinental Line. After the business meeting the presiding officer of the New York Association, Mr. Clohosey, resigned the chair to Mr. J. R. Pels, president of the National Association, saying that from this point the meeting was to be national in character, since the Chicago and Los Angeles branches were now to participate.

After Mr. Schmidt's address, Mr. Casler opened the line and the following transcontinental program was enjoyed:

Mr. Pels, after speaking with Mr. Morse, resident director of the National Association of Purchasing Agents for the Pacific Coast, made a short address on "The Aims and Progress of the Association."

Mr. E. B. Hendricks, secretary National Association, exchanged greetings with Mr. R. H. Turner of the executive committee, saying in part:

"The American Telephone and Telegraph Company is one of the most efficient organizations in the world, and it is only through the team work of its officials and employees that such an undertaking as the Transcontinental Telephone Line is possible. We are receiving a practical demonstration of this team work this evening and with similar team work on the part of the purchasing agents in different sections of the country, and the various branches of the National Association, it will be possible to accomplish much in the interest of the purchasing profession."

A vocal selection by Miss Eleanor Wadsworth and replies from San Francisco on the victrola were followed by an exchange of greetings between Mr. Clohosey, first vice-president of the New York Association, and Mr. F. A. Marsh, chairman of the Chicago Association. Mr. Clohosey paid a high tribute to the Bell System, as follows:

"When you consider the almost unthinkable developments made within the past forty years in the wonderful invention of the telephone and its organization, we are forced to admit that nothing under the sun is beyond the power of the human brain to accomplish. Swift produced his 'Gulliver,' Defoe his 'Robinson Crusoe,' yet never in the wildest flights of their imaginations did they conceive of anything as wonderful as this we are accomplishing to-night, conversing with you gentlemen in Chicago and Los Angeles and listening to conversations nearly 4,000 miles away. This feat of magic is due to two things—individual effort and a thorough organization."

Mr. W. G. Langford, second vice-president of the National Association, in speaking with Mr. Foster, of the Los Angeles Association, also spoke highly of the Bell System, dwelling at considerable length upon the efforts of the telephone pioneers, the marvelous genius of the telephone engineers and the efficiency of the present management. The theme of his talk was "Courtesy," and in this respect he pointed out that the telephone industry is an example.

Mr. H. B. Gould in Chicago spoke with Mr. J. A. Crawford in Los Angeles, and the usual victrola selections, voice of the Pacific, and Star-Spangled Banner closed the demonstration.

University of Vermont Alumni

CHEERS and songs in chorus and individual conversations were interchanged between 125 alumni of the University of Vermont, in New York, 15 in Chicago and 10 in San Francisco on the evening of April 21, when the New Yorkers were gathered for their annual dinner at the Machinery Club.

Mr. A. D. Welch, general commercial engineer of the New York Telephone Company, was presiding officer of the evening. Mr. Schmidt and Mr. Casler conducted the demonstration.

Those who spoke over the Line were: Prof. J. R. Wheeler, N. Y.; Mr. J. B. Stearns, '91, San Francisco, and Mr. H. K. Tenny, '80, Chicago; Pres. Guy Potter Benton, of the University of Vermont, Dr. J. W. Buckham, '85, San Francisco, and Dr. R. W. Bishop, '77, in Chicago; Dr. Earl M. Wilbur, '86 in San Francisco, Mr. M. A. Sattlee, Chicago, and Mr. Ernest Brodie, '86, N. Y.; Mr. Robert C. Sattlee, '79, N. Y., Mr. M. A. Sattlee and Judge A. C. Barnes, Chicago, and Dr. Thomas W. Huntington, '71, San Francisco; Mr. Elias Lyman, '70, N.Y., Judge Barnes and Doctor Huntington; President Benton and Doctor Huntington; Mr. M. C. Robbins, '98, N. Y., Mr. A. M. Taylor, '99, Chicago, Dr. L. P. Adams, '97, San Francisco; Mr. H. B. Oatley, N. Y., Mr. A. M. Taylor.

President Benton said at the close of the demonstration:

"I should like to bring my tribute of respect and lay it at the feet of a man who is not here to-night, Dr. Alexander Graham Bell, inventor of the telephone. I am sure that all of us have thoroughly enjoyed and been benefited by this unique entertainment to-night. This is the first time I have ever known of conversation by telephone across the continent, and it truly is wonderful. Of course, we owe a great debt of gratitude to the Vermonter who has followed up the work of Doctor Bell and has made this great achievement possible. I refer to our distinguished fellow-citizen of Vermont, the Hon. Theodore Newton Vail. I should move, therefore, that we express our thanks, as we have already done to Mr. Casler, and ask him to convey our expression of high regard and sense of gratitude to Mr. Vail, the president of the American Telephone and Telegraph Company."

Yonkers Chamber of Commerce

AT the third annual banquet of the Merchants' Association of the Yonkers Chamber of Commerce in the Park Hill Inn, Yonkers, April 24, a demonstration of transcontinental telephony was greatly enjoyed by 225 of the members and their friends.

Mr. G. A. Leimbach gave the address on "The Triumph of Science," and Mr. W. R. Eno, local commercial manager presided over the Line. The first to speak to San Francisco was Mayor James T. Lennon, who exchanged greetings with Hon. Edward S. Rainey, secretary to Mayor Rolph. Dr. N. A. Warren, president of the

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Yonkers Chamber of Commerce spoke with Mr. Warren Manley; Mr. Gideon H. Peck, retiring president of the Merchant's Association, and guest of honor of the evening, with Mr. L. N. King. Mr. E. R. Chamberlain sang over the wire, and at the response on the victrola at San Francisco, the audience burst into applause. Mr. Leslie Sutherland, vice-president and general manager of the Yonkers Railroad Company, Mr. Richard Eddie, Jr., treasurer, Alex. Smith & Sons Carpet Company, Mr. Frank W. Ward, superintendent, Otis Elevator Company, and Mr. D. J. Cashin exchanged greetings with San Franciscans of their various professions..

As the roll call which closed the Line came to an end the entire assemblage gave three cheers for the Telephone Company, Mr. Eno and Mr. Leimbach.

New York Association of Advertising Agents

ON April 25 the New York Association of Advertising Agents held its annual dinner at the Hotel Martinique, with 200 members and guests present and the Transcontinental Line to connect them with representative advertising agents, publishers and advertising managers of Chicago and San Francisco.

After an address on "What an Advertising Manager Expects of an Advertising Agency" by Mr. George W. Hopkins, Mr. Schmidt spoke on "The Triumph of Science" and Mr. Casler then opened the Line.

Conversations, interspersed with musical selections, were carried on between: Mr. P. B. Bromfield and Mr. Wm. Woodhead, San Francisco; Mr. H. K. McCann and Mr. Harrison Atwood; Mr. O. H. Blackman and Mr. D. P. Paige; Mr. N. C. Kingsbury and Mr. Bell, Chicago, and Mr. Twist, Winnemucca; Mr. George C. Sherman and Mr. James O'Shaugnessey; Mr. Chas. Presbrey and Mr. Coulter McKeever and Mr. Chas. Harris; Mr. Wm. H. Johns and Mr. J. B. Pinkham; Mr. Colin Armstrong and Mr. J. A. Adler and Mr. H. G. Bates.

Mr. Bromfield expressed the thanks of the assemblage in these words:

"I am quite sure I am expressing your sentiments when I say I am glad I am living and that I had this opportunity of listening to our fellow advertising men over this wonderful telephone line. I marveled at the time when I talked from the American Institute Fair which was held at Broadway and Eightieth street to 15 Dey street, and I thought that that was the most wonderful thing, but this conversation would not take much to start me into extravagant expressions of ecstasy over what we have heard to-night, and I think we should thank Mr. N. C. Kingsbury, Mr. Casler, Mr. Schmidt and the Telephone Company for having given us this most wonderful entertainment."

Mr. Colin Armstrong moved the following resolution:

"*Resolved:* That this Association desires to assure the American Telephone and Telegraph Company of its hearty and sincere appreciation of that Company's courtesy and fraternal comity in placing us in personal touch with our good friends and co-workers in Chicago and on the Pacific coast, thus contributing in a very large measure to the most pleasurable gathering this Association has ever enjoyed."

This was followed by an extremely interesting and instructive address by Mr. N. C. Kingsbury on advertising, after which the chairman proposed a rising vote of thanks to Mr. Kingsbury and the Telephone Company for the wonderful evening they had provided.

National Metal Trades Association

AT the annual convention of the National Metal Trades Association, in the north ballroom of the Hotel Astor on April 27, the 350 members gathered from practically every important city east of the Mississippi were connected by the Transcontinental Telephone Line with 25 members in Mr. Bell's office at Chicago and 200 members in San Francisco.

Mr. Schmidt and Mr. Casler conducted the demonstration. Those who spoke over the Line were: Mr. Herbert H. Rice and Mr. Constant Meese; Mr. W. H. Van Dervoot and Mr. John A. McGregor; Mr. F. C. Caldwell and Mr. O. H. Fischer; Mr. H. H. Latham and Mr. P. S. Teller; Mr. Wm. H. Barr and Mr. Edward J. Fowler; Mr. James A. Emery and Mr. Fred Koster and Mrs. Emery.

The audience rose and applauded at the close of the demonstration, and Mr. Alexander D. Noyes, financial editor, New York *Evening Post*, speaking on "The Outlook in the United States After the Close of the European War" spoke of the Telephone Company in these words:

"It is a splendid type of organization and efficiency from which any industry might be able to draw an excellent object lesson."

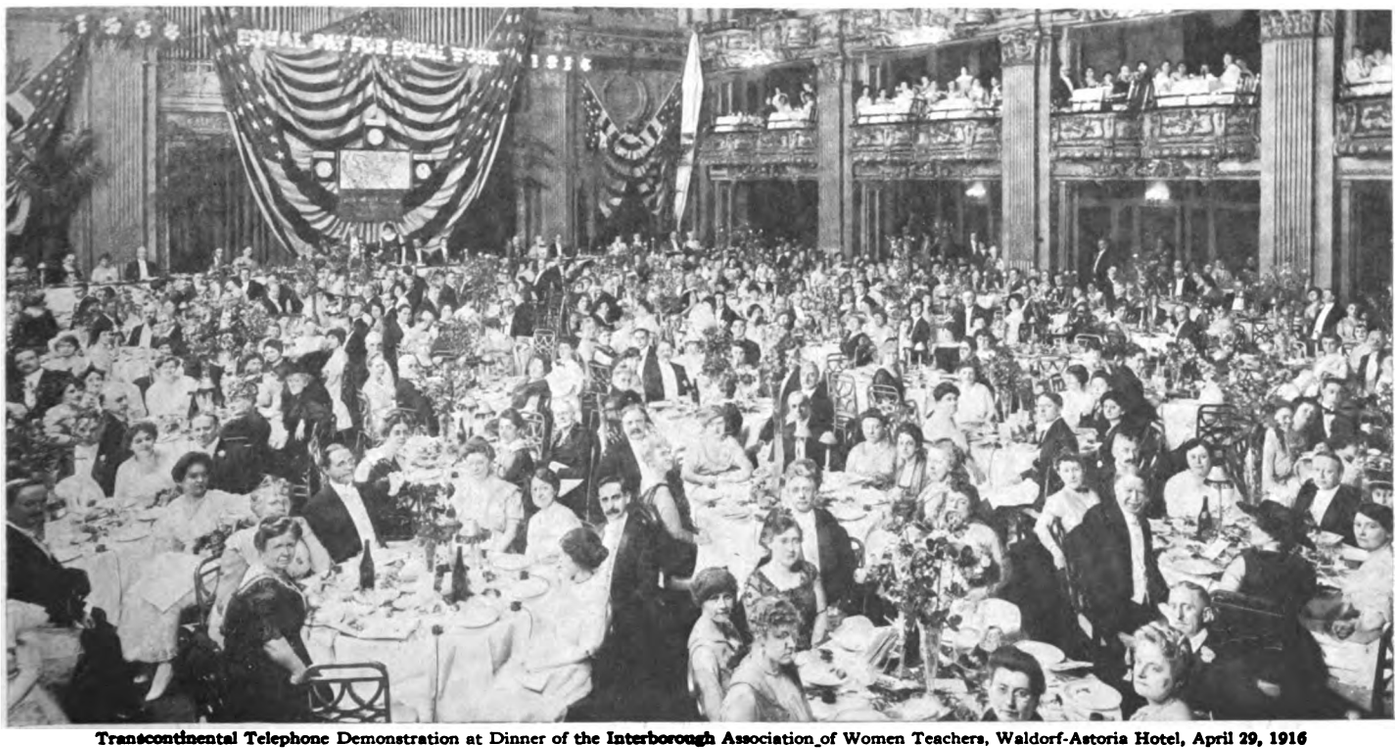
East Orange Hope Lodge F. & A. M.

SEVEN hundred members of Hope Lodge and their friends were present at the transcontinental demonstration given on April 28, at East Orange under the auspices of the Lodge.

Mr. L. C. Hall, district commercial manager, opened the line, after the address by Mr. Schmidt.

Conversations and music showed to an appreciative audience the many possibilities of the Line. Those who actually used it were: Mr. G. W. Fortmeyer, past grand master, State of New Jersey, and Mr. C. L. Patton, past grand master, California; Mr. John B Taltavall, and Mr. H. G. Bates; Mrs. Frank Bliss Colton and Mrs. Vernon Waldron; Mr. John W. Noble, master, Hope Lodge and Mr. Charles L. Patton; Mr. William M. Thompson, deputy grand master, State of New Jersey and Mr. Patton; Rev. Charles T. Walkley, chaplain, Hope Lodge, and Archdeacon Emory; Mr. Walkley and Mr. Vernon Waldron.

Mr. Heathe Gregory, sang over the line, and also talked with Mr. Bates.



Transcontinental Telephone Demonstration at Dinner of the Interborough Association of Women Teachers, Waldorf-Astoria Hotel, April 29, 1916

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Interborough Association of Women Teachers of New York City

THE Shakespeare tercentenary celebration of the Interborough Association of Women Teachers took place at their tenth annual dinner, at the Waldorf-Astoria on April 29, when the transcontinental telephone enabled teachers and educators in San Francisco and Chicago to join with the 1,400 teachers assembled in New York to do honor to Shakespeare.

Mr. Leimbach delivered the address on the "Triumph of Science" and Mr. Schmidt presided over the line. The most notable features of the demonstration were Sir Herbert Beerbohm Tree's plea to the teachers in the three cities for a better understanding of Shakespeare, and Sir Herbert's rendition, of Hamlet's soliloquy; the Duke's speech from "As You Like It," given by Mr. Thomas W. Churchill, former president of the Board of Education of New York; Robert Ingersoll's "Tribute to Shakespeare," given by Miss Alice Fischer; and Mr. John Hays Hammond's address on "A World Court To Settle International Disputes." Greetings were exchanged between: Miss Grace S. Strachan, president of the Interborough Association of Women Teachers and Mrs. Mary FitzGerald, representing the California Teachers; Hon. Leo Arnstein, representing the president of the New York Board of Education, and Mr. John D. Shoop, superintendent of schools, Chicago; Mr. Henry Bruere, representing Mayor Mitchell, and Hon. Edward P. Rainey, representing Mayor Rolph; Rabbi Alexander Lyons and Rev. D. R. Crowley. Hon. Arthur S. Somers, member of the Board of Education, sang "I Hear You Calling Me" in a manner which Mr. Bates, who has heard the song over the line many times at various demonstrations, stated was more perfect than any he had ever heard. Miss Grace Delaney also sang from New York and was heartily applauded.

Miss Strachan expressed the appreciation of the Association for the demonstration at its close, and during the Transcontinental program one of the most spontaneous tributes to the powers of the Line was given by Sir Herbert Tree, who when he heard the audiences at Chicago and San Francisco applaud him, threw up his hands in amazement and said to Miss Strachan, "This is wonderful, marvelous! Why, it is uncanny, almost mysterious."

Foremen Aaronson and Youngbauer were responsible for a particularly fine piece of work in having the wiring and testing completed on time, although work could not be commenced until nearly four o'clock.

Brooklyn Polytechnic Institute

"PREPAREDNESS" was the keynote of the annual dinner of the Polytechnic Institute of Brooklyn held at the Hotel Breslin May 1 and the preparedness of the telephone industry was exemplified by a very successful demonstration of transcontinental telephony.

Five hundred persons at New York, 250 at the University of California in Berkeley and 6 at the office of Mr. Bell in Chicago, heard Major-General Leonard D. Wood, in a brief address on "Military Preparedness." Mr. Bancroft Gherardi presided over the Line. A notable feature of the demonstration was a duet by Miss Alice Elliott in Berkeley and Mr. Edwin R. Myers in New York. The accompanist was in Berkeley and the effect of this extraordinary duet was remarkable and extremely successful from a musical as well as from a telephone standpoint.

Mr. J. J. Carty, Dr. Samuel Sheldon, professor of Electrical Engineering, Polytechnic Institute, Professor Cory of the University of California, Mr. R. L. Willard, Mr. Roy Heffner, Lieut. Commander E. P. Jessup, U. S. N., and Mr. J. S. Nitchie, '66, conversed over the wire, college cheers were exchanged and the usual musical features of the demonstration were enjoyed.

After the line was closed Mr. Carty spoke briefly and addresses were made by Mr. Fred W. Atkinson, president of the Polytechnic Institute and by Lieut. Commander Jessup, both bearing directly upon the subject of "Military and Technical Preparedness."

Omaha Commercial Club

A REUNION by telephone of nine prominent New Yorkers, formerly residents of Omaha, Neb., with 450 members of the Commercial Club of Omaha in that city was the feature of the meeting of that organization on May 2.

Mr. N. C. Kingsbury opened the line and the following men spoke with friends in Omaha: Mr. C. F. Junod, Mr. E. J. Cornish, Mr. R. G. Coad, Mr. H. W. Casler, Mr. Thos. Price, Mr. Alex Miller, Mr. D. J. O'Brien and Mr. H. D. Estabrook. Several of the Omaha audience spoke with friends in San Francisco and one with his brother in Los Angeles. The New York end of the demonstration was held in the Directors' Room at 15 Dey street.

Commonwealth Masonic Lodge

MASONIC TEMPLE, Brooklyn, was the scene on May 2 of a transcontinental demonstration before 900 members and guests of the Commonwealth Lodge No. 409, F. & A. M., at which Mr. Carroll gave the address on "The Triumph of Science" and Mr. C. E. Mapother, district commercial manager, presided over the Line.

Vocal selections from New York and victrola records from San Francisco as well as the roar of the Pacific Ocean, varied the program of conversations between the following members and officers of the organization in Brooklyn and San Francisco: Mr. Paul L. Parrish, and Mr. Fred H. Wight; Mr. T. A. Taylor, Mr. T. C. Cameron and Mr. Wight; Mr. Cameron and Mr. John

Transcontinental Telephone Demonstration at Annual Dinner of the Brooklyn Polytechnic Institute, Hotel Breslin, Manhattan, May 1, 1916

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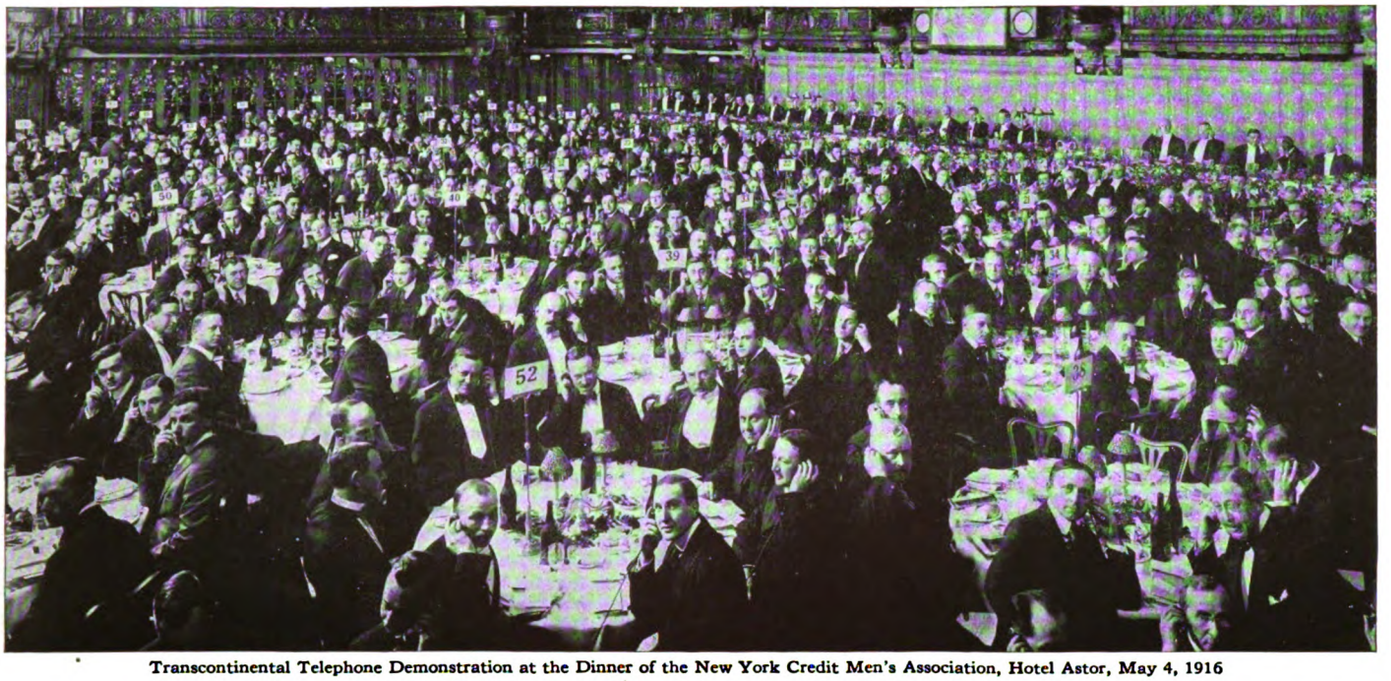

Transcontinental Telephone Demonstration at the Dinner of the New York Credit Men's Association, Hotel Astor, May 4, 1916

Whicher, Hon. William M. Calder, and Mr. Frank V. Keesling; Mr. Herbert P. Gunnison, Mr. William M. Patterson, and Mr. Edward J. Campbell with Mr. Wight; Mr. H. Story and Mr. H. G. Bates.

New York Credit Men's Association

AT the 21st annual spring banquet of the New York Credit Men's Association at the Hotel Astor, May 4, transcontinental telephony was demonstrated to a gathering of about one thousand persons.

Mr. Casler and Mr. Schmidt conducted the demonstration, eliciting frequent applause from the very appreciative audience. The speakers over the wire were: Mr. W. F. H. Koelsch, president of the Association; Mr. A. H. Alexander, secretary; Mr. J. H. Tregoe, secretary-treasurer of the National Association; Mr. H. Uehlinger, vice-president of the N. Y. Association; Mr. Frank S. Flagg, and Mr. L. J. D'Auby.

The usual musical selections and voice of the Pacific were enjoyed, and speeches made after the Line was closed by Mr. Tregoe, Hon. Robert H. Roy, Judge, Kings County Court, and Hon. Sydney Anderson, Congressman from Minnesota, all paid tribute to the achievements of the Telephone Company.

The widely representative character of the audience, drawn from various lines of industry and business, made the demonstration a particularly successful one from the point of view of acquainting a wide field of business interests with the possibilities of the Transcontinental Telephone.

Rotary Club of Utica

MR. N. C. KINGSBURY addressed the 425 members and guests of the Utica Rotary Club on the subject of the "Development of a System," at the first annual dinner of the Club, held May 4 at the Hotel Utica. Addresses were made also by Mr. R. Seymour Hart,

Transcontinental Telephone Demonstration at the First Annual Dinner of the Rotary Club of Utica, N. Y., at Hotel Utica, May 4, 1916

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president of the Rotary Club of Utica, Mr. Roland B. Woodward, secretary, Rochester Chamber of Commerce, and Mr. D. C. Cox, division general manager. Motion pictures of views along the route of the Transcontinental Line accompanied Mr. Kingsbury's address, and at its close Mr. Kingsbury opened the Line itself for a demonstration.

Greetings were exchanged between President R. Seymour Hart and Mr. H. H. Feighner, of the San Francisco Rotary; Hon. James D. Smith, Mayor of Utica, and Hon. James Rolph, Jr., Mayor of San Francisco; Hon. Thomas R. Proctor, and Lieut. Col. Lewis E. Goodyear; Mr. D. C. Cox and Mr. H. G. Bates; Mr. F. H. Hazard, president Utica Chamber of Commerce, and Mr. H. G. Adams, of the San Francisco Chamber; Mr. George E. Dunham, editor Utica *Daily Press*, and Mr. E. J. Wickson, Department of Agriculture, University of California; and as a result of Mr. Kingsbury's asking if anyone in the audience wished to talk with any friend in San Francisco, in order to demonstrate that this Line was available to any telephone, Mr. James Eells and Mr. Merwin K. Hart spoke with Mr. Eells's uncle, Mr. Charles Eells, in San Francisco.

Mrs. Florence Hughes Start, in Utica, sang over the Line, and victrola selections were transmitted in return. The sound of the Pacific waves was heard as moving pictures presented views of the breakers at Cliff House, and the roll call of wire chiefs ended a very successful demonstration.

American Bankers' Association

REPRESENTATIVES of every State in the Union were numbered among the 350 bankers, their wives and guests, at the banquet of the Executive Council of the American Bankers' Association, at Briarcliff Lodge, Briarcliff Manor, N. Y., on May 9, when a very successful demonstration of transcontinental telephony was given.

Mr. Carroll gave the address on "The Triumph of Science," and commented briefly on the mobilization of the wire and wireless forces of communication, recently conducted at Washington. Enthusiastic applause followed the allusions to these tests. Mr. Schmidt opened the Line and conversations were held between the following: Mr. James K. Lynch, president American Bankers' Association, in Briarcliff, and Mr. James K. Wilson, vice-president Wells Fargo Nevada Bank, and Mr. George Kennedy, both in San Francisco; Mrs. Lynch and Mrs. Kennedy; Mr. William A. Law, ex-president American Bankers' Association, and Mr. F. L. Lipman, vice-president Wells Fargo Nevada Bank; Mrs. Arthur Reynolds and Mrs. J. G. Berryhill; Mr. Frank A. Vanderlip, president National City Bank, and Mr. H. G. Bates; Mr. William J. Henry, secretary New York State Bankers' Association, and Mr. F. H. Colburn, secretary California Bankers' Association; Mr. Benjamin Strong, Jr., governor Federal Reserve Bank of New York, and Mr. John Perrin, chairman of board, Federal Reserve Bank, San Francisco; Mr. Arthur Reynolds and Mr. J. G. Berryhill.

During his talk over the wire Mr. Henry spoke of the value of the transcontinental service in these words:

"Somebody's always at the task of reducing the size of this old world of ours—distances between points are shortening up all the time. Only a few months back you and I counted ourselves fortunate when we could talk with each other after a coast to coast journey of four or five days—now it takes but a few moments to bring us into speaking contact.

"This is especially fortunate for us bankers. Each succeeding day brings additional proof of the fact that the banking business of the country is in a state of transition.

"National and State banking legislation is tending toward uniformity and unification, and principles of scientific application are finding favor everywhere. Any new device that enables us to hasten the progress of these readjustments is a welcome instrument of service. This *extra* long distance 'phone service will prove a welcome agent in our future onward movements toward better and sounder banking conditions."

Music was transmitted over the Line from both ends, including a vocal selection by Mr. Harold Jarvis, in Briarcliff, and "Dixie," from San Francisco, at the suggestion of Mrs. Frank A. Vanderlip that for the pleasure of the Southerners present a Southern air be transmitted. "The Star-Spangled Banner," and the good-night roll call of wire chiefs brought the program to a close.

The heartiness of the three cheers which followed the rising vote of thanks testified to the sincerity of the appreciation on the part of this audience from every State in the nation, to the value of this link which binds their various localities together.

Newark Lincoln Club Resolutions

SO much did the demonstration of transcontinental telephony impress the members of the Lincoln Club, of Newark, at their nineteenth annual dinner on February 12, that at their regular meeting on April 6, the following resolutions of appreciation were adopted and subsequently forwarded to the presidents of the American Telephone and Telegraph Company and the New York Telephone Company:

WHEREAS: The New York Telephone Company and The American Telephone & Telegraph Company, through its local and other representatives, enabled the Lincoln Club of the City of Newark to make use of the transcontinental telephone service between Newark and San Francisco, and

WHEREAS: At the Nineteenth Annual Dinner of the Club, at the Washington, on Saturday evening, February 12, 1916, over three hundred members and friends of the Lincoln Club, representing the commercial, financial, political, and other interests of the City of Newark, availed themselves of the courtesy extended and listened to the exchange of greetings between Hon. William H. Taft, former President of the United States, Hon. William B. McKinley and Martin B. Madden, Members of Congress from Illinois, Hon. Thomas L. Raymond, Mayor of the City of Newark, with prominent officials and representative men of the Pacific Coast, and Herbert L. Thowless, president of the Lincoln Club, with Charles B. Turrill, secretary of the Lincoln Grammar School Association of San Francisco, with much pleasure, and

WHEREAS: The New York Telephone Company and its affiliated company, have given proof of progressiveness and have brought the telephone service up to the highest point of efficiency, not only the local service, but the transcontinental service, *Therefore, be it*

Resolved: That we, the members of the Lincoln Club of the City of Newark in meeting assembled, desire to show our appreciation of the exceptional privilege conferred upon the Club and do hereby extend to the New York Telephone Company, The American Telephone & Telegraph Company, and to the local and other representatives, our thanks for the splendid demonstration and for the able and efficient manner in which the lecture and the talks across the American Continent were managed, and *Be it further*

Resolved: That these resolutions be spread upon the minutes of the Club and copies sent to the New York Telephone Company, The American Telephone & Telegraph Company and to the local and other representatives who aided in making the event a success.

(Signed) HERBERT L. THOWLESS,
President.

Attested:

(Signed) HERBERT L. GREENE,
Secretary.

COMMITTEE

GILBERT E. CROGAN, *Chairman.*
WILLIAM F. BEACH,
WILLIAM N. BAYLEY,
ALBERT CANFIELD,
WILLIAM J. CLEVELAND,
AUGUSTUS F. EGGERS,
MILES R. FINCH,
SCOTT GERMAN,
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TRUMAN K. HANNAHS,
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THADDEUS F. MACEVOY,
CHARLES E. MAILLARD,
JOHN L. PFEIFER,
THERON A. PHILLIPS,
JOHN W. VREELAND,
JOHN J. YOUNGBLOOD, JR.

Newark, N. J., April 6, 1916.

Mrs. Nouveau Riche makes her home with her suburban niece, a new subscriber in the Westchester Division. When shown the new telephone she said:

"How much did you have to pay for it?"

"It is $3 a month."

"Mercy, what will the neighbors say? I should be mortified to death if they found out we were buying it on the instalment plan."

It's Worth It!

We take this challenge of philosophy from a trade paper called the *Transmitter*, published in Baltimore:

A mathematician figures it out that a telephone company loses 125 hours' work every day through the use of the word "please" by operators. Well, why not?

Courtesy is not an expense in business or in any other part of life, but a necessity.

We all have to live with other people.—*Collier's.*

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The TREND of REGULATION

By R. V. Marye, General Attorney

Reduced Rates to Churches Illegal in Pennsylvania

THE Public Service Commission of Pennsylvania recently decided that a contract between a public service company and a municipality, wherein it is provided that the churches in the municipality shall receive service at different rates than those set forth in the tariffs of the company is in violation of law and cannot be approved.

Rate Not Unreasonable Merely Because Similar Utility Charges a Lower Rate

THE mere fact that a carrier's rate is higher than that of another carrier for the performance of practically the same service does not in and of itself establish the unreasonableness of the first carrier's rate in the opinion of the Michigan Railroad Commission expressed in a recent decision. In the same decision it was held that discrimination and undue preference exist only when all shippers are not granted the same rates and service in the transportation of the same commodities under like conditions.

Municipality Cannot Revoke a Franchise Which Has Been Accepted and Used

THE New York Public Service Commission, Second District, decided that a franchise granted to an electric light company and accepted and used by the company could not be revoked by the Board of Trustees of a village, which about six months after the acceptance, decided to rescind the franchise.

Connecting Company Agreements not Subject to Regulation

THE Public Service Commission, Second District, New York, decided in the case of the Paul Smith Hotel Company *vs.* Mountain Home Telephone Company that there is no provision in the Public Service Commissions law or in the Transportation Corporation law of the State of New York giving the Commission authority to determine the conditions under which service shall be interchanged between telephone companies.

Judicial Support of Commission Regulation

THE United States Supreme Court, in a recent decision, held that a complainant against an interstate carrier for the inadequacy of facilities furnished must bring his complaint before the Interstate Commerce Commission rather than the State Courts because uniformity of rates and practices, which is the cardinal principle of regulation, could not be as well conserved by State Courts and juries as by the Interstate Commerce Commission.

Power of the Commission to Increase Rates

THE petition of the Ulster & Delaware Railroad Company for the approval of an increase of mileage book rates in excess of two cents per mile was denied by the Public Service Commission, Second District, New York, on the ground that since the Railroad law provided that the maximum charge should be two cents the Commission had no power to increase above said maximum, despite the fact that the railroad company had proven that the two cent rate did not produce a reasonable return. The Appellate Division of the Supreme Court, Third District, in reviewing the action of the Commission, found that the amendments to the Public Service Commissions law made in 1911 clearly give the Public Service Commission authority to increase railroad mileage book rates above the maximum fixed in the Railroad law whenever, after a hearing the existing rates were found to be unjust or unreasonable. The Court held that Section 60 of the Railroad law establishes the maximum rates for mileage books in the absence of an order by the Commission and represents the law on the subject only so long as the Commission takes no action.

State-wide Duty

THE Colorado Public Utilities Commission by an order in a recent case compelled the Mountain States Telephone & Telegraph Company to extend its telephone facilities into a field in which the evidence showed that there would not be a fair return upon the property involved in the extension. The Commission took the position that the earning of an immediate fair return was not the test as to whether an extension should be required, since the utility, having the advantage of a natural monopoly, within the State, should in the performance of its duty to the public, make every effort to serve all communities and thereby make its service of greater value to the public generally.

Limitation on the Power of a Commission to Reduce Rates

THE Public Service Commission of Massachusetts, in the case of the School Committee of Canton *vs.* Blue Hills Street Railway Company held that an Act of the State Legislature, which fixed the rate of fare for school children on street railroads at not exceeding one-half of the regular fare was in the nature of special taxation and rested upon the authority possessed by the Legislature and not delegated to the Public Service Commission. The Commission stated that while it could indirectly reduce such school rates by making reasonable reductions in the regular fare, it has no authority to require direct reductions of school rates below the standard fixed by the Legislature.

Duplication of Telephone Facilities

THE Wisconsin Railroad Commission, in its opinion handed down on January 21, 1916, in the Wilton Farmers Telephone Company case, states that the undoubted purpose of the law of Wisconsin is to prevent wasteful duplication of plants and equipment in all cases where existing facilities are reasonably adequate or can be made so, although where opportunity has been given to an existing utility to improve its service and facilities and such utility has failed to do so there is often necessity for permitting duplication and paralleling.

The Judicial Recognition of Limitation of Use

THE Lincoln County Court of Nebraska, in the case of Swancutt *vs.* Reynolds, decided that a telephone company's rule limiting the use of the telephone to the subscriber, his family, guests, and members of his household and his employees when engaged in his business was reasonable, and that a violation of the rule by a subscriber who received messages over his telephone and retransmitted them to the subscribers of another company from a station of that company in his house was ground for the denial of service to said subscriber and removal of his instrument.

Private Operation of Public Utilities Preferable to Municipal

THE Pennsylvania Public Service Commission in a recent case approved the incorporation of a public service company for the furnishing of electric current in a section partially served by the municipal plant of an adjoining borough on the ground that competition between a municipal plant and a private corporation would not establish the active and ruinous competition that would result from the operation of two private corporations in the same field, and that moreover the service rendered by a private corporation is likely to be better for the public, in that the private corporation will be more diligent in developing the territory and extending its facilities to persons desiring the service.

Competition Prohibited

THE Public Utilities Commission of Illinois, in its First Annual Report for the year ending November 30, 1914, calls attention to the general rule adopted by the Commission to the effect that certificates of convenience and necessity will be denied all telephone companies where the applicant seeks to establish an additional telephone system in a city or village where a telephone system is already in operation and furnishing adequate service at reasonable rates.

Permit Constituted a Franchise

THE Mayor and Aldermen, of Portland, Me., ordered the Postal Telegraph Cable Company to remove its wires and poles from a certain street and to apply for permission to lay conduits in the said street on the ground that the permit under which the poles and wires were erected was invalid and void because it had been signed by the City Clerk instead of the Mayor and Aldermen as required by the Statute. The United States District Court held that the order of the Mayor and Council should be set aside; that the irregularity, if any, in the signature to the permit had been made good by long acquiescence on the part of the city; and that said permit constituted a franchise which was assignable and which could not be terminated or substantially modified except for good cause or by virtue of some constitutional power supported by some special reasons in favor thereof, and that said order was radical and substantial in its terms and by its verbiage destroyed what existed and left in place thereof only a right to apply for a new franchise.

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Telephone Club and Other Activities

Wire Chiefs' Night

THE Manhattan & Bronx central office forces held their second Ladies' Night at the Telephone Club on Wednesday evening, April 26, 1916. An excellent dinner, prepared by Manager Pierce, was served in the grill between 6 and 8 P.M. to 150 guests. After the dinner, an entertainment was given in the gymnasium to an audience of about 400. The formal program as arranged was as follows:

Address of Welcome . J. S. Miller, District Inspector
Violin Solo . . . . . H. Rhein
Magic Art . . . . . J. J. Casey
Instrumental selections. . . . . Aeolian String Sextet
Vocal selections . . . . . Grace Quartet
Monologues . . . . . H. C. Coulter
Popular Songs . . . . . L. Troyer

At the close of his address a beautiful young lady presented Mr. Miller with a gorgeous bouquet of carrots, cabbages, and other seasonable vegetables which might easily have been used the next day to reduce the high cost of living.

Announcement of the Affair (Original 18 in. x 24 in.)

While the third number on the program was being announced, an interruption occurred which was not understood by the audience until the effect upon Mr. Miller was noticed. At first it was supposed that the program was proceeding and the Man from Egypt with an Assistant Magician had arrived. But when the two blackcork artists opened their bag of tricks, it was found that Mr. Miller was the butt of their jokes, and so it was realized that he was the victim instead of the culprit. Of course, everybody wondered then who the culprits were that dared interrupt the program arranged by Mr. Miller, and the best guess was that Mr. A. L. DuBois was trying to get even for what had been done to him on a previous Wire Chiefs' Night.

An account of this affair prepared by Mr. Miller was intercepted en route to THE TELEPHONE REVIEW and another substituted for it. Fortunately the Editor was an interested spectator on the evening in question, and this account is written from intimate knowledge of what actually happened instead of being an ex parte account of the duello.

After the entertainment the guests all gathered in the assembly room for the dance. The music, furnished by J. Eddie Wise, was of the best. The old adage, "It is never late until twelve, and after that it is early," was proved by the large number of guests who stayed for the dancing.

Construction Department

THE Construction Department, Manhattan-Bronx and Westchester Division, held one of their enjoyable smokers on April 29.

Prize bowling, pool, and billiards kept everybody "stepping lively" until 10.30 P.M. The crowd then assembled in the gymnasium to witness a very interesting athletic exhibition. There was a burlesque boxing bout between Kelly and Barry and two wrestling bouts of 10 minutes each. The first wrestling match resulted in a victory for John Skoagland of the Bronx over Jack Grumbsley of Newark in 7 minutes. The other wrestling match between Joe Westry and E. Nelson went to a draw.

Messrs. Behnken, Schiff, Van Twisk, Fedderson, and Donnelly, representing the splicers, won the team prize in the bowling contest. The high score of the evening was made by J. M. Mellinger and in the head pin contest S. Dorliett carried off first prize. Tommy Hill won distinction by being awarded the booby prize.

Refreshments were served in the grill room at 11 P.M. and as the crowd started homeward the "smile that wins" was very much in evidence.

Gymnasium Class

THAT the Telephone Club has a real gymnasium class among its members was amply proved to an audience of over 350 at the exhibition and dance, on Friday, April 28. From the moment the class appeared on the gymnasium floor, in uniforms of white with the Telephone Club emblem, and lined up for the dumbbell drill, until the last ripple of applause for the skillful work of the squad on the horizontal bar had died away, there was not a dull moment, and at the dance in the reception room the members of the class showed themselves to be good hosts as well as athletes.

The success of the exhibition is due to the earnest efforts of Mr. R. E. Moore, instructor, who, a comparatively short time ago, took a group of green, awkward young men, and not only by his ability, but by his qualities of leadership and pleasing personality, developed them to an extent where they felt justified in "showing off" a bit. So arrangements were completed to show just what the gymnasium class was and what it could do.

Special events consisted of work on the parallel bars and horizontal bar by a squad of the gymnasium class, and tumbling by Messrs. S. W. Starling and F. M. Barnes. The skill and ability shown by these men caused continued applause and favorable comment. W. L. Zinke, the long, and P. T. Campbell, the short, then gave an exhibition of blind boxing. Neither was seriously damaged, as most of the blows hit the atmosphere.

After the gymnasium exercises, everybody adjourned to the reception room, for dancing.

Bowling

AFTER seven months of bowling, the Accounting Department bowling team of the Western Division closed the season with a banquet and theater party Saturday evening, May 6. The following members were present: A. R. Roberts, E. F. Steiger, W. D. Holmes, B. A. Smith, W. M. Spann, A. C. Barmby, G. A. Robinson, and F. Keller.

Mr. Gail Robinson, toastmaster, gave a living example of how he came in second two or three times during the season. The story was rather long, but the following will tell it in a few words:

"With fingers weary and worn,
Tired and sleepy his look;
He sat in his back bedroom,
Wishing he had bowled a hook."

Mr. Keller also enlivened the evening by telling of his past performances and hoping for better luck next season.

The club has bowled for seven months under a rather unique plan. Each member was allowed a sufficient number of pins, based on his previous month's bowling, to give him a fair chance with the scratch bowlers, a weekly contribution being made toward the prizes for the month and the banquet at the end of the season. Monthly cash prizes were awarded to the member winning the most games from his opponents during the month and there was an additional cash prize for high game.

Individual Averages for the Season and the Number of Prizes Won

Name	Games	Averages	Prizes Won
Roberts, A.	88	178	4
Holmes, W.	84	172	4
Barmby, A.	90	171	1
Steiger, E.	63	164	..
Spann, W.	87	164	2
Robinson, G.	81	151	3
Smith, B.	90	148	..
Keller, F.	27	144	1

High Games for Each Month

October, Holmes, W.	261
November, Barmby, A.	254
December, Roberts, A.	227
January, Robinson, G.	254
February, Holmes, W.	255
March, Roberts, A.	248
April, Robinson, G.	238

Organization Changes

General

At a meeting of the Board of Directors, held May 2, J. S. Kennedy was appointed an assistant secretary of the Company.

Mr. Kennedy will continue as secretary of the Employees' Benefit Fund Committee, and will perform such other duties as may be assigned him.

New Jersey Division

Plant Department

Wm. H. Clarke, formerly special inspector, appointed supervising line foreman, Elizabeth sub-district.

John G. Lowden, wire chief New Jersey division, transferred as district foreman to Manhattan and Bronx division.

Azro H. Keteltas, switchman, New Jersey division, transferred as wire chief to Manhattan and Bronx division.

Central Division

Plant Department

J. J. Monahan, switchboard wireman, appointed inspector in charge of outside troublemen, vice C. Diffenderfer, resigned.

M. Hammil, lineman, appointed troubleman, Watertown.

Western Division

Plant Department

H. C. Kline, formerly supervising clerk to division equipment superintendent, appointed toll line supervisor in charge of toll line maintenance in the division.

E. J. Boorman, formerly clerk in the district equipment supervisor's force, Rochester, appointed supervising clerk to the division equipment superintendent.

Miss C. J. Rennie, head stenographer, Buffalo, transferred to the Engineering Department, New York City.

Miss E. B. Irvine, formerly clerk in the division office, appointed head stenographer, Buffalo.

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NEW YORK TELEPHONE COMPANY

GENERAL OFFICES, 15 DEY ST., NEW YORK

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F. H. BETHELL, Vice-President
H. F. THURBER, Vice-President
FORD HUNTINGTON, Vice-President
WALTER BROWN, Secretary & Treasurer
J. L. SWAYZE, General Counsel
C. T. RUSSELL, General Solicitor
R. V. MARYE, General Attorney

J. A. STEWART, General Manager
J. S. WILEY, General Auditor
E. F. SHERWOOD, Chief Engineer
H. C. CARPENTER, Engineer
T. P. SYLVAN, Asst. to Vice-President
E. A. GURNEE, Asst. Treasurer
WALDRON HOPPINS, Asst. Secretary
J. S. KENNEDY, Asst. Secretary and Secretary Employees' Benefit Fund Committee.

COMMERCIAL DEPT.

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General Com'l Supt.

W. F. BAKER
Asst. to Gen'l Com'l Supt.

A. D. WELCH
General Com'l Engineer

R. S. SCARBURGH
Advertising Manager

J. LENIHAN
Collection Attorney

Manhattan-Bronx & Westchester

J. R. POLLOCK
Division Com'l Manager
15 Dey Street

Long Island

H. W. DRAKE
Division Com'l Manager
81 Willoughby Street
Brooklyn

New Jersey

H. G. KERR
Division Com'l Manager
281 Washington Street
Newark

Hudson

J. A. JAMISON, Jr.
Division Gen'l Manager
Telephone Building
Albany

Central

D. C. COX
Division Gen'l Manager
321 Montgomery Street
Syracuse

Western

C. A. SPAULDING
Division Com'l Manager
Telephone Building
Buffalo

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General Supt. Plant

A. W. ALLEN
Supt. Buildings & Supplies

J. C. RENNARD
Real Estate Manager

W. T. GURNEE
Plant Accountant

Manhattan-Bronx & Westchester

BURCH FORAKER
Division Plant Supt.
24 Walker Street

Long Island

P. D. HONEYMAN
Division Plant Supt.
547 Clinton Avenue
Brooklyn

New Jersey

I. J. THORP
Division Plant Supt.
281 Washington Street
Newark

Hudson

E. H. POWLEY
Division Plant Supt.
42 Howard Street
Albany

Central

F. J. CHESTERMAN
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321 Montgomery Street
Syracuse

Western

P. O. JACOBS
Division Plant Supt.
Telephone Building
Buffalo

TRAFFIC DEPT.

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General Supt. Traffic

R. H. BOGGS
Traffic Engineer

H. G. GREENE
Manager Public Telephones

A. D. SCOVEL
Mgr. Traf. Inspection, M.-B.

Manhattan-Bronx

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Division Supt. Traffic
15 Dey Street

Westchester

M. H. ORTH
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40 South Fifth Ave.
Mt. Vernon

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Albany

Central

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Division Supt. Traffic
321 Montgomery Street
Syracuse

Western

J. J. WELCH
Division Supt. Traffic
Telephone Building
Buffalo

ACCOUNTING DEPT.

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Auditor

J. A. KENNEDY
Auditor of Disbursements

A. J. NORMAN
Auditor of Receipts

B. M. WILSON
Chief Traveling Auditor

Lower Manhattan

L. F. HALSTED
Division Auditor Receipts
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Upper Manhattan-Bronx

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Western

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Division Auditor Receipts
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THE DRAMA OF THE WIRES

Over the wires of the BELL SYSTEM, day and night, go the voices of men and women speaking their lines in the drama of life. An ever-changing theme it is.

Now grim tragedy stalks the boards — a sad message reaches the home and a sob vibrates into the night. Now a flash of comedy — gaiety, and mile-a-second laughter leaps over unreckoned space. Again the scene shifts — a curt command, and across a continent the wheels of commerce move. So runs the endless Drama of the Wires.

Behind the scenes, 70,000 BELL operators give the cue to those whose turn it is to play their part. An army of linemen and inspectors sees that the stage settings are correct in every detail. In the wings, executives with trained eyes and brains stand watchful and alert.

The cast includes the tens of millions of men and women who make up the nation's population. Their stage reaches from ocean to ocean. The players are constantly changing; the scenes are ever different, but the action never stops. For the BELL SYSTEM has provided the means whereby each and all of us play our part day by day in this most wonderful drama of the wires which is LIFE itself.

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·The TELEPHONE·REVIEW·

CARTY'S HALL

By John Finley

For the first time in the history of the world, so far as known, a meeting was conducted by telephone, as if the participants were in the same city and hall, though some of them were three thousand miles away. It was a meeting of the American Institute of Electrical Engineers, and several sections met in the cities named, motions being put in one, seconded in another, and voted for in all. Dr. J. J. Carty, who presided, received next night the Franklin Medal in recognition of his achievements in telephony.

Carty? You've never heard of Carty? Well,
That's no reflection, as it seems to me,
On Carty—Carty, who's been farther heard
Than any other man that ever lived,
Excepting Vail who from his New York tower
Called Carty up in Honolulu once
And conversation held without a wire.
"What hath God wrought!" were man's first words
Transmitted o'er Atlantic's wire-strung shores;
But o'er Pacific's waves the first to fly
Were simply "Hello, Carty! Are you there?"

Well, Carty hired a hall, as big it was
As all outdoors. One wall was firmly set
On Plymouth Rock, where freedom-loving waves
Still beat upon a "stern and rock-bound coast";
The western looked upon a placid sea,
Which from a lonely peak in Darien
Balboa saw, and had a Golden Gate
Which oped upon the jewelled Orient.
The other walls to North and South were hung
With tapestries diaphanous and dim,
Woven of straight imaginary lines
Of latitude, and filmy argent threads
Spun on gray waters and the desert plains.
And o'er these walls there spread a ceiling such,
By night, as that which ever hangs above
The hurrying migrants to and from New York
In its vast terminal, yet vaster far,
And sprent with stars, millions of miles away,
With which such as Pupin have often talked
In spectroscopic tongue and learned what things
Are burning in their hearts beyond our ken—
Such was the wondrous hall which Carty hired,
Almost as large as all the ancient world
Of Ptolemy, from Ethiopia
To Thule, and from Sera to the sea.

You think this but a wild Arabian tale?
But let me tell you more: Last night did I
Attend a meeting in this spacious "Carty Hall,"
And Carty was presiding genius there.
A black-haired, wiry, Celtic man he was,
Of gentle, clear-voiced speech and wireless ways.
Without a gavel, such as chairmen use,
To order he commanded all the host,
Wide-scattered as the flocks on Grampian Hills;
And many thousands hearing made response,
From far Atlanta to the farther sea.
Chicago, Philadelphia, Boston—all
Cried "Here!" New York and San Francisco, too;
They listened all to speeches and to songs,
They stood as one and cheered the Stars and Stripes,
Tho' mountains, lakes and prairies lay between—
For "Carty's Hall" was The United States.

'Tis prophesied that all the quick and dead,
From Boston to Bombay and back again,
Shall at one moment hear the selfsame sound,
The stirring sound of Gabriel's final trump;
But long before that day shall come, perchance,
A Carty, or his scientific heir,
Will make the universe his "Carty Hall"
Wherein each earth-encircling day shall be
A Pentecost of speech, and men shall hear,
Each in his dearest tongue, his neighbor's voice
Tho' separate by half the globe.

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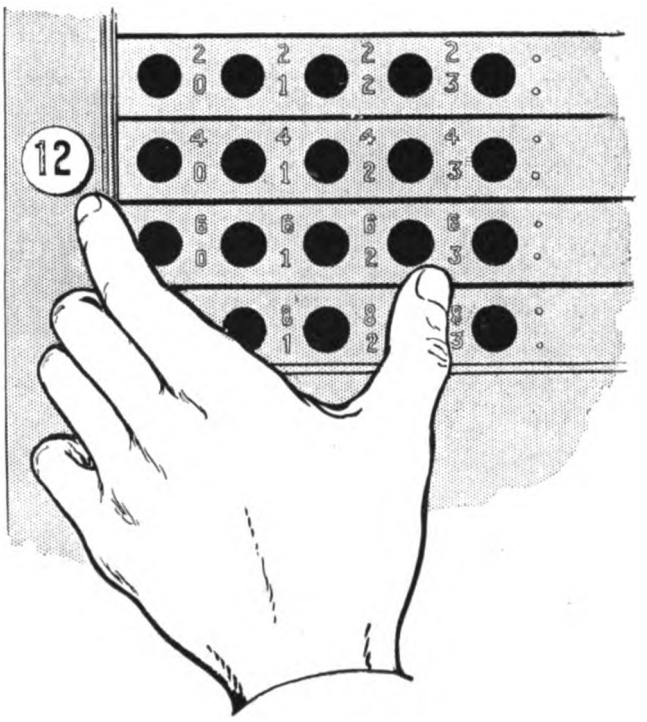

A small section of a telephone switchboard, showing the advantage of calling a number with a pause between the hundreds and tens.

When the Operator Says "One Two—Six Three"

No doubt you have noticed the way the telephone operator repeats the numbers you give her. When you ask for "Market One Two Six Three," for example, she repeats "Market—One Two—Six Three," pausing just a fraction of a second between the hundreds and the tens.

There's a real reason for this practice:

The switchboard before which the telephone operator sits is honeycombed with tiny holes, each the termination of a subscriber's line. These holes are in sections of one hundred each. To locate "1263," the operator first finds the section labeled "12" and then the "63" hole in that section.

Careful tests have proved that this method of repeating numbers tends to prevent mistakes, and, as the operator more readily locates the required number on the switchboard, it helps to speed up your service.

Perhaps you will find in this a suggestion for your own adoption. You can help the operator in her efforts to give you quicker service by adopting this new style in ***calling*** telephone numbers.

NEW YORK TELEPHONE COMPANY

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The TELEPHONE REVIEW

New York July 1916

VOLUME 7 NUMBER 7

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

Published monthly by the New York Telephone Company. U. N. BETHELL, President; WALTER BROWN, Secretary and Treasurer. Publication Office and Principal Place of Business, 15 Dey Street, New York.

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Making Use of "The Telephone Review"

ONE of the problems of the Editor is the selection of articles, or "stories" as we call them, which will appeal to the many different tastes and interests of the employees for whose benefit THE TELEPHONE REVIEW is published. Some prefer highly technical discussions of engineering feats and problems, while others have a liking for articles regarding the more interesting phases of administrative work. There are also those who would like to have plenty of fiction included for their entertainment, and there are still others who are interested solely in articles relating to the commercial side of the business.

All these interests THE TELEPHONE REVIEW is very anxious to serve, and consequently we are always on the lookout for articles having a very broad application in the affairs of the Company.

In the March, 1916, number we published an article under the title, "The Supervisor's Profession," and, although it was a "Traffic" story, it was believed at the time that it would be of considerable interest and real benefit to all departments and offices where organized supervision was depended upon for results.

It is gratifying to learn of instances bearing us out in that belief. Here is an example. A certain supervising officer in the Plant Department, at a conference of his immediate subordinates, and as an exception to his usual practice of not *requiring* them to do anything, instructed them all to read very carefully this article on "The Supervisor's Profession" and subsequently to make a personal report to him of all they found in it which was applicable to their own supervisory jobs and to the work of their forces. He did this, he explained, because he himself had found so much in the article that he, as well as they, could not afford to lose.

That is a splendid way of making use of THE TELEPHONE REVIEW, and it is hoped that there are many others who have been able to profit by it in similar ways.

Suppressed Initiative

IN a great many instances the squelching of an employee who busies himself tinkering with matters about which he is neither informed nor in any way concerned, results in suppressing initiative that might intelligently be directed toward the development of abilities which are only dormant; these cases require further treatment, else the employee is apt to go stale.

Everyone in a supervisory capacity finds occasion at some time to repress subordinates who are straying far afield from the work committed to them and consequently are neither doing that work well nor are qualified for transfer to other departments where they think they are capable of becoming bright and shining lights.

Such ambition is commendable in so far as it indicates a healthy dissatisfaction with present attainments, for there could be no progress above the dead level of mediocrity without individual effort to rise.

Some supervisors are pushed up from the ranks by the need for filling positions, while others rise by the sheer force of ability. Nothing distinguishes between them more than the way in which they treat the case of such a subordinate. One will probably tell him to stick to his work, or get out. He might not be so brusque about it as this, but the result would be the same. The other will in all likelihood take a personal interest in the matter, and show the subordinate how to develop himself along the lines of the work he is engaged upon, or else advise either a preparation for transfer to some other department, or that he seek some other employment along the line of his aptitude. As for the subordinate, it will probably be found that all he needs is frank and friendly advice and an evidence of sympathetic interest from his superior. The degree to which this attitude can be carried and the beneficial results which come from it the other departments will find exemplified in every Central Office of the Company among the operating staff.

It is very necessary to suppress initiative when it leads in the wrong direction, but something must be supplied at the same time to take its place, and if this is done in an intelligent and human way, cause for dissatisfaction may be eradicated, and the organization welded together as a unit.

Atlanta to Have Pioneers

Georgia Metropolis Is Selected for Sixth Annual Meeting, October 19 and 20, 1916

ATLANTA will open her hospitable doors to the Telephone Pioneers of America for their Sixth Annual Meeting on Thursday and Friday, October 19 and 20.

It is none too soon for Pioneers to make note of this, if they believe in preparedness for a good time. Boston, New York, Chicago, Richmond, and San Francisco have taught the Pioneers what to expect when they reach Atlanta, but only Atlanta can excel herself in fulfilling all such anticipations.

The committee of arrangements for the meeting consists of Mr. J. Epps Brown, Southern Bell Telephone and Telegraph Company, Atlanta; chairman, Mr. A. L. Salt, Western Electric Company, New York, and Mr. B. A. Kaiser, American Telephone and Telegraph Company, New York. Mr. Salt is also chairman of the Committee of Transportation. Mr. R. H. Starrett, No. 15 Dey street, New York, is secretary of the society.

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The Cable-Box

TWO wires in a cable-box had a terrible dispute.
Each one considered he had gained considerable repute.
"I always manage to keep well, I shun all care and trouble,
And I'll gladly wager, in this box, you'll fail to find my double.

"You, for instance, yesterday, got such a funny bug,
Without a bit of warning, you broke from yonder lug.
Then came the gay Inspector, who twisted you around,
And twenty minutes afterward you had to hit the 'ground.'

"And then a little rain came in and you got soaked right through,
And Mr. Sub. he sat right down and wrote harsh things of you.
Again came friend Inspector, the second time that day.
You acted very clever, when he called in, 'Found OK.' "

"Now that you're through, I'll take the floor, and have my little say.
I hate to talk about myself, I find it doesn't pay.
I've been in this here box some time, the others call me boss,
And no one ever could assert that I was ever 'cross.'

"Another thing, you must admit, I've always been a sport,
For no one ever came to me to find that I was 'short.'
Why, a deskman one day spoke of me—admit that he was right.
He said to Central pleasantly, that I'm a 'steady light.' "

ROLAND P. WIRTHS, *Broad Wire Chief's Office.*

A Miracle Becomes Commonplace

A NEW YORK broker in chemicals, seeing quick money in the war situation, bought sixty lots of his specialties from the same number of jobbers within one day and made a fortune for himself and his clients. He did it while seated at his desk, and without touching pen to paper; just sat and gave his orders by word of mouth as if those sixty dealers in different parts of the country had all been in the same room with him.

There was a time within the easy memory of men who would hate now to be called old; a time when Roosevelt, Taft, and Wilson were about graduating from college, when that drug broker could not have put through in two weeks of travel and correspondence the sixty-fold deal which he effected in the hours of one working day. That was the time before Alexander Graham Bell, forty-one years ago this month, demonstrated that sound "can be conveyed over a wire by an undulatory current of electricity excited by the vibration of a metal diaphragm close to the end of a magnet and reproduced by a similar instrument at the other end which reverses the process and gives forth audible sounds."

It takes longer to read aloud this description of the most useful of all modern inventions than it does to give a business order in New York and have it heard in San Francisco—a great deal longer; every word spoken within sight of the Bartholdi statue is heard at the Golden Gate one-fifteenth of a second after it has been uttered.

Every day more than nine millions of Americans, connected with 64,000 exchanges in the system of one concern, are exchanging 26,000,000 conversations over 21,000,000 miles of wire. Each recurring anniversary of the telephone emphasizes a miracle that has become commonplace.—*Editorial, Star-Eagle (Newark, N. J.), June* 9, 1916.

Bringing Him Up in the Way He Should Go

"IT is never too soon to start right" is a free translation of the lusty tones of a young friend of Miss Bennett, of the Dey street mail room. Small Herbert Rockwell Denton's household was called on the telephone by a family friend at 8 P.M. one evening, when young Herbert was exactly one hour old. Miss Bennett answered the telephone and said the young man would speak for himself, so over the wire came his hearty greeting in three strong-lunged cries.

Vacation Typhoid

THE Department of Health of the City of New York has issued a circular from which we quote as follows:

Typhoid fever is most prevalent in New York City during the summer and autumn. It is partly of local origin, caused by direct or indirect infection from active cases of the disease, or from the so-called "carriers," who are harboring and excreting typhoid fever bacilli. In spite of the best efforts of this Department to prevent it, the disease may also be contracted through milk or other articles of food or drink contaminated with the bacilli of typhoid fever. Many cases are contracted out of the city by persons on pleasure or business trips, who come down with the disease after returning home, not only suffering themselves, but also becoming a danger to others. Thus there is a constant influx of cases of typhoid fever, each one of which may further spread the disease.

Last year 372 New York City people contracted typhoid fever outside of the city. Thirty-five of them DIED of the disease. Many of these people were on vacation.

You are planning for this year's vacation.

Don't be one of those who will come back with typhoid fever.

Don't go where there has been much typhoid fever lately;

Don't drink strange water or raw milk unless you are sure they are safe;

Don't eat food prepared in unclean places or by unclean persons;

Don't go where the premises are not kept clean and sanitary;

That is outside protection.

For sure inside protection: *Be immunized against typhoid.*

The little operation is simple—no pain, no interference with business. It can be done by your own physician or at the Department of Health offices free of charge.

139 Centre street, Manhattan.

Flatbush avenue, Flett and Willoughby streets, Brooklyn.

3731 Third avenue (St. Paul's Pl.), The Bronx.

372-374 Fulton street, Jamaica, Queens.

415 Bay street, Stapleton, S. I., Richmond.

Any weekday from 9 A.M. to noon and from 1 P.M. to 4 P.M.; Saturdays, from 9 A.M. to noon.

We urge you to attend to this *now*. Many put it off until just before they start for the country. This does not give time enough. Three doses are necessary, with seven day intervals. That means two weeks in all.

Typhoid fever is a serious and often fatal disease. The "inside protection" referred to in the above circular consists of the injection of a serum. It may be noted that all who attend the military training camps are required to be inoculated in this way. The value of this information is not confined to New York City.

A Little Midsummer Homily

IN these midsummer days, when even the calmest are apt to suffer at times with frazzled nerves, and it is much easier for most of us to keep hot-tempered than cool-headed, that great part of us known as "the public" is very apt to vent an accumulation of nerve force on the girl we all know as Central. Central may be a very charming person. She may look like a picture, sing like a seraph, dance like a dervish, and swim like a mermaid, between hours, but while she is on duty to The Public, she is merely an abstraction—a Voice at the other end of the wire.

It does not probably occur to you ever to wonder if she is the same age as your own daughter—if she has brown or blue eyes—if she has been to high school—if she is young, and gay and girlish, out of business hours. To you she is just an abstraction.

Now, abstractions are safe and sound for business purposes. It is much better that Central is just a Voice over the telephone. It is much better that the rules are rigid and that she must remain an abstraction as long as she is in the employ of the Company. It is a safe, sane, business policy.

And yet—the next time these hot summer days get on your frazzled nerves, and you sail in to give Central a piece of your mind, may it not be well to remember that she is not really an abstraction—that she is, after all, more than a Voice at the other end of a wire? It may be that she does not find it any cooler than you do. It may be that she also has nerves. Or it may be that she is quite as young, quite as pretty, and quite as sensitive as your own daughter, of whom you are so proud. It may even be that to her you are also an abstraction—a Voice at the other end of a wire.

Central is not perfect because, in spite of all efforts to make her only a Voice, she is very, very human. But, then, after all, we are not perfect ourselves.

Let's count ten, next time, before we call maledictions on Central's head. Our good manners may so surprise her that she may try to emulate them, even though a Voice at the end of a wire.—*Pensacola (Fla.) Journal.*

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The Transportation Problem of The New York Telephone Company

By W. M. Van Deusen and J. McLachlan

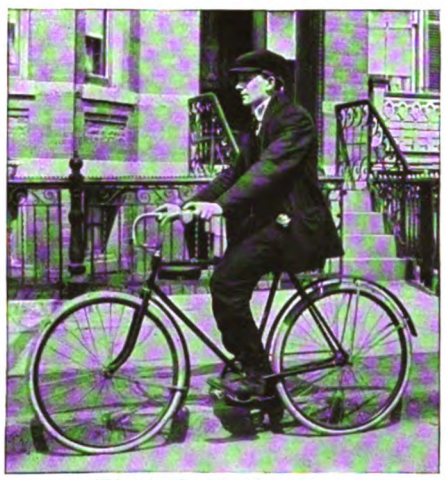
A Fleet of New York Telephone Company Trucks Used in Distributing Material from Western Electric Company's Central Storeroom

THE transportation problem within the Metropolitan area of the New York Telephone Company involves the daily efficient movement of men and material in an approximate area of 1,500 square miles, and within a radius of approximately thirty miles of the New York City Hall. Within this area are more than 850,000 of the busiest telephones in the world.

Four thousand telephone men are working every day within this Metropolitan area, some in gangs of ten to fifteen men, some in two and three men gangs, and many working as individuals. The locations where they work change frequently, sometimes several times a day, but they are more or less distributed at all times over the entire area. Scattered over this territory are approximately 180 central offices, and fifty-four storerooms conveniently located to serve this army of men.

Our transportation problem can be briefly described as follows:

1. Moving the men from their headquarters to the job.
2. Moving the men from job to job during the day.
3. Moving men from job to job, who work at eight or ten locations in a day, in response to what might be known as emergency calls.
4. Transportation of supervisors having charge of several gangs or a large number of individual workmen.
5. Transportation of superintendents over entire districts.
6. Moving large amounts of material from the base of supplies to district storerooms.
7. Redistribution of this material from district storerooms, either direct to the individual workman or to the central office.
8. Delivering material to the men on the job.



Bicycle Used by Inspectors

Transporting Material Used in Telephone Work from a Central Warehouse to Branch Warehouses, and Redistributing It from These Points to Workmen in the Field

Material to be used in the Telephone Plant may be separated into two classes:

1. When a large construction or reconstruction job is planned, material for the work is ordered far enough in advance to allow of its being shipped to the job directly from the manufacturers. Poles may come in carload lots from Pennsylvania or Maryland and be consigned to the railroad distributing point nearest to the job; cable may come from Chicago; strand and other hardware from the Pittsburgh mills, etc.
2. Material which must be assembled at a central warehouse, or supply depot, to be daily redistributed to district centers, or directly to the job; this warehouse stock is composed of more than 9,000 different kinds of material used in the Telephone Plant.

Warehouse distribution. In distributing material from the warehouse, fifteen trucks are used. Within the congested districts of Manhattan, material is delivered in unit packages directly to a prospective telephone subscriber's home or business office. This is known as the retail method of distribution.

Where distances are greater, economy of operation necessitates the delivery to a sub-warehouse or storeroom; the locations of such sub-warehouses are shown on the accompanying map. This we know as the wholesale distribution of material.

The individual trucks for handling this problem vary in capacity from 1,500 pounds to 10,000 pounds. This capacity flexibility allows us to send trucks from the central warehouse to the sub-warehouse loaded to capacity, whether 1,500

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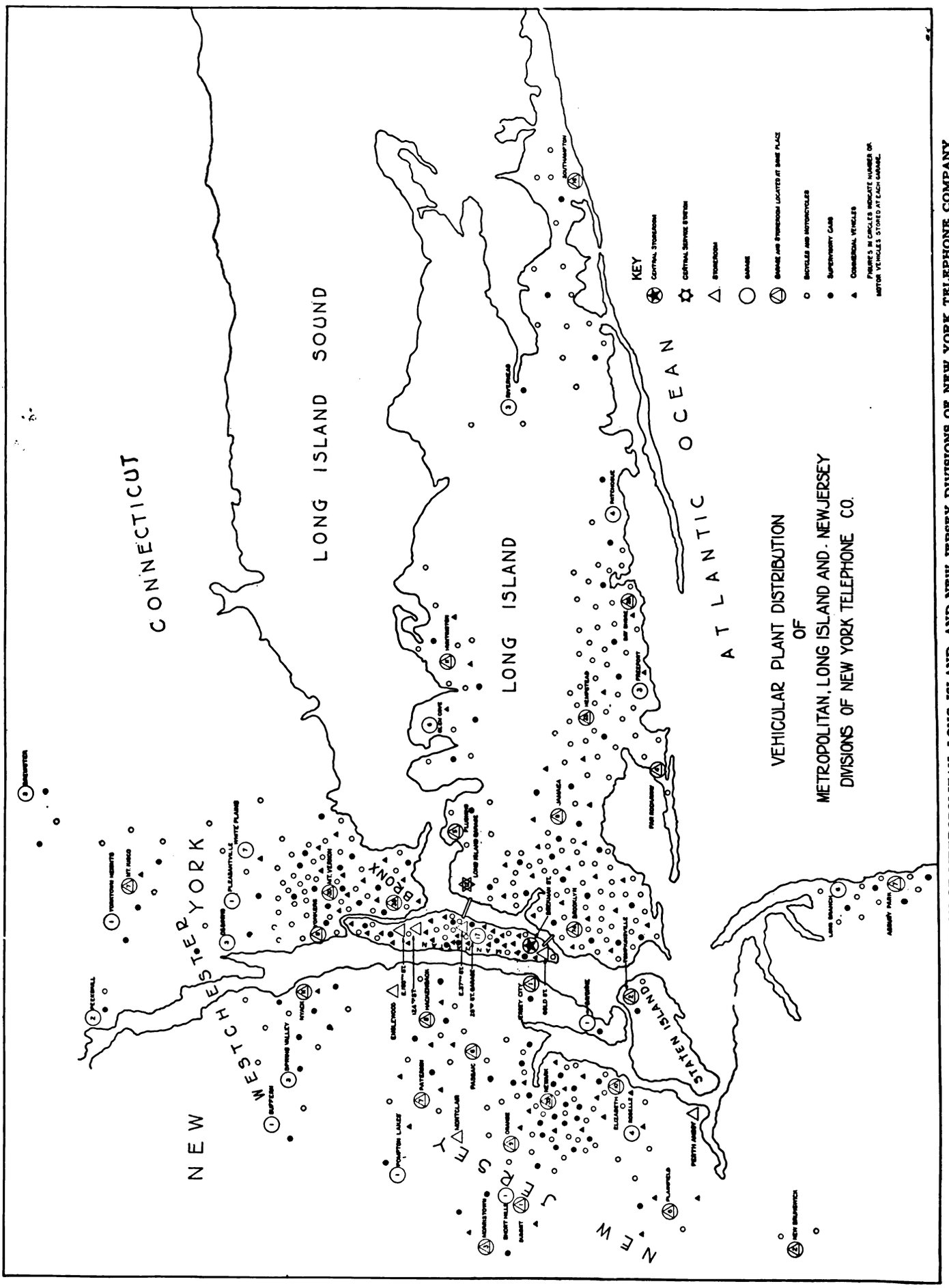

VEHICULAR PLANT DISTRIBUTION OF METROPOLITAN, LONG ISLAND, AND NEW JERSEY DIVISIONS OF NEW YORK TELEPHONE COMPANY

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pounds of material is to be transported or five tons. All of this makes for ton load economy of operation.

Sub-warehouse or storeroom distribution. The problem of delivery from a sub-warehouse is identically the same as that from the wholesale or central warehouse, except that the quantity of material is decreased. If the sub-warehouse serves a congested area, retail deliveries are made in unit packages directly to a prospective subscriber's residence or business office by vehicles ranging in capacity from 750 to 1,500 pounds. Where the sub-warehouse serves a less densely populated area, the problem of delivery from this point on merges with the transportation problem involved in building telephone plant; that is, the Plant man may receive from the sub-warehouse material to be used in serving a new subscriber, in repairing a line, or in constructing new outside plant; transport it to the point where it is to be used; and then perform the work of putting it in use.

Statistics on Telephone Material Delivered from the Central Warehouse During the Year 1915.

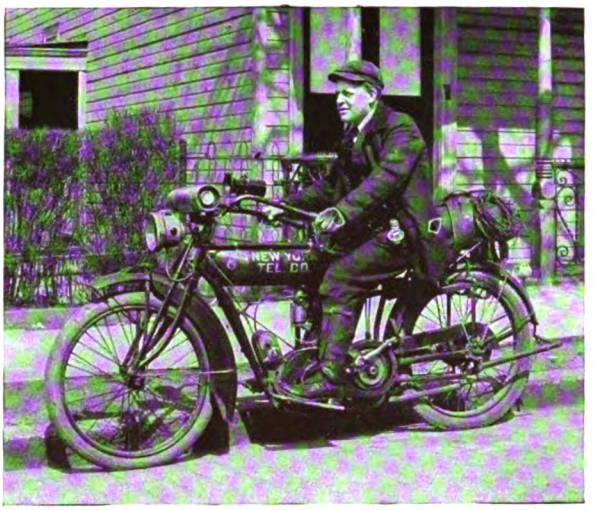
Number of trucks employed, 15; weight of materials handled, 10,700 tons; number of deliveries made, 110,000; number of miles traveled, 161,000.

Costs vary with the type of delivery made, and run from a maximum of $3.75 per ton mile for retail delivery, to a minimum of $.08 per ton mile for wholesale delivery.

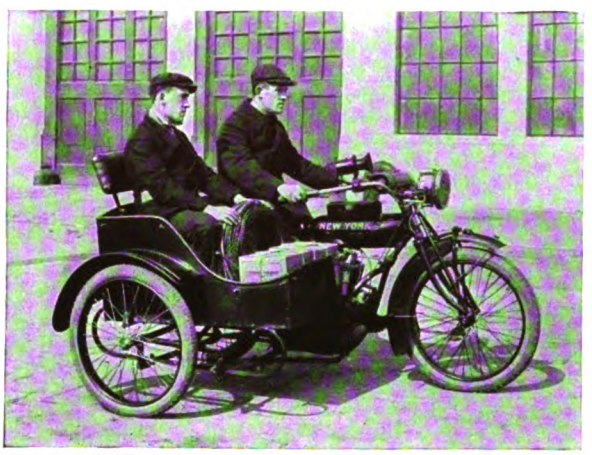
To cope with this entire situation approximately nine hundred vehicles are now operated by the New York Telephone Company, varying in kind from bicycles to heavy motor trucks.

Types of Vehicles

Bicycles. About three hundred bicycles are now distributed among those men whose duties are such as to necessitate the carriage of little material, but who are obliged to visit many different points each day; these bicycles prove especially valuable to "trouble hunters," instrument installers, and inspectors, wherever their work is confined to congested areas involving many short trips and not covering an excessive total mileage.



Motorcycle Used by "Trouble Shooters"



Motorcycle With Side Car Used by Installer and Helper in a Suburban Exchange District

Motorcycles. Motorcycles are used by the same class of men who use bicycles, but in territories where it is necessary to travel much greater distances between jobs. They are valuable as a means of transportation owing to their speed, but have marked limitations, as they are liable to upset on wet and slippery roads. In suburban districts their economical use in winter is questionable. With proper luggage carriers a considerable amount of material can be transported.

Motorcycles equipped with Side Cars. When the motorcycle is equipped with a side car, 200 pounds in addition to the driver may be carried. This equipment is sometimes furnished individual workmen who must carry a large amount of material or a helper. It is more stable than the motorcycle and its use is less restricted. However, there is some question as to whether the substitution of a light runabout, with its greater safety and range of operation and load capacity, would not prove more economical in the long run.

Supervisory cars. It is necessary for those whose duties are of an official or supervisory nature to visit various localities where work is either contemplated or under way; these points may be many, adjacent to each other, or may be widely scattered in the rural communities. They require a light dependable car, simple of operation, and of simple and rigid mechanical construction; one whose mechanism should not need the constant care of a skilled driver. Light two-passenger runabouts of uniform type of chassis are provided for this work. In emergency, these can be operated up to 35 miles per hour under good road conditions. The proper limit of operating speed, however, should be less. Their carrying capacity is about 750 pounds, including one passenger; under stress, this capacity can be raised to 1,000 pounds, although this is not conducive to the long life of the car.

In view of this many of these cars are equipped with box bodies capable of carrying a considerable bulk of material, thus rendering them available for light delivery purposes in

Type of Supervisory Runabout

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case of need; that is, they become cars of a convertible type.

Light delivery wagons. The delivery of material of all sorts, and of instruments and their parts in particular, is handled by light delivery wagons of two types: one whose chassis is identical with that of the abovementioned supervisory car, and with the same load capacity of 750 pounds; and the other of a different type of chassis, and of 1,000 pounds capacity. Both cars are equipped with inclosed panel type delivery bodies, as this material must be kept dry.

The cars perform a special duty, in that each one must make from forty to sixty delivery points per day, all of which may be within a 25 mile route; the average weight of these deliveries will run from one to twenty pounds.

Light trucks. For material of a heavier type it has been found advantageous to utilize cars of from 1,500 pounds to 4,000 pounds capacity. These chassis are equipped with the following types of bodies:

Panel delivery (closed body).
Open express with solid top.
Open platform with side racks.

They are utilized for the delivery of medium heavy material, requiring longer runs between stops, and deliveries of larger bulk than those handled by the light delivery wagon.

It is believed economical to assign trucks of the 4,000 pound rating to all light gangs of from eight to ten men, doing general construction work, wherever it may be necessary for these gangs to make several moves each day, or where considerable quantities of material have to be moved in connection with the work.

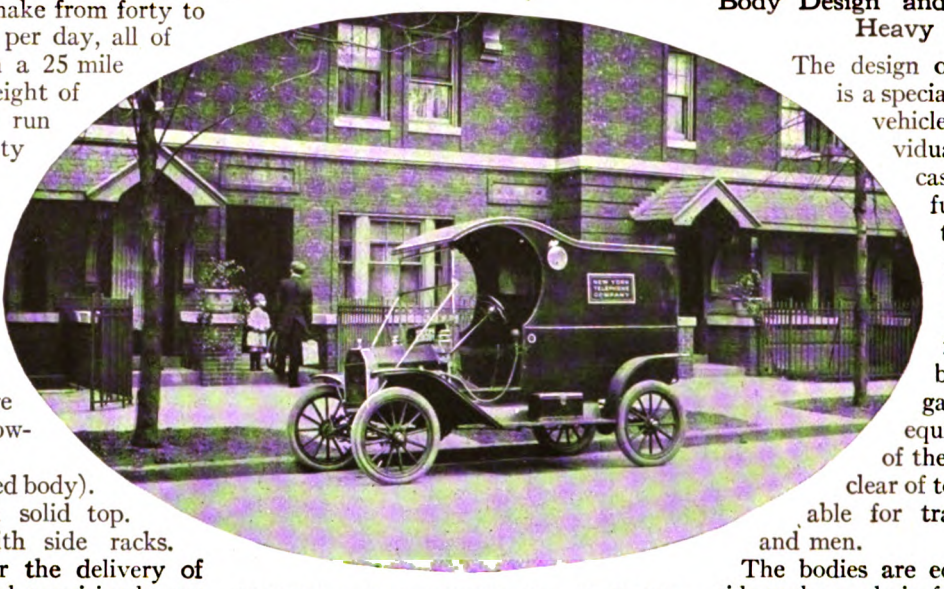
Heavy trucks. For general heavy duty the approved practice is to use trucks of 10,000 pounds capacity. The delivery of all heavy material in bulk, such as subway material, cable, etc., is handled by these cars. The average length of run required is generally less for this type of vehicle, and the speed made is considered of secondary importance to the carrying capacity and power equipment.

The bodies with which these cars are equipped are of open platform type, as it is not considered necessary to provide any covering for them, other than a tarpaulin which can be conveniently carried, rolled, on top of the driver's cab. When spread over the body as a covering, it is supported by means of removable cross irons, which are arched to prevent water from collecting in the center of the tarpaulin.

These large trucks, all of which are equipped with winches, with their powerful motors, lend themselves readily to adaptation in the special application of motor trucks to telephone construction work.

Chassis Design

Balance. It is very important that the design be such that the greater portion of the load, say 85 per cent., be carried on the rear axle; better traction is obtained; the life of the tire is prolonged; the front springs are rendered less subject to breakage; a minimum of vibration at the steering wheel is obtained; and hence the handling of the car is greatly facilitated, in that the driver need not contend with the constant racking of the steering wheel, particularly when driving over uneven roads. This is a highly important factor in preserving the physical and nervous condition of the driver, and lessening the liability of accident.



Light Delivery Wagon of 750 lbs. Capacity Used for Delivery of Material to Subscriber's Premises

Frame flexibility. The flexibility of the frame is a point worthy of consideration. With a highly flexible frame the wheels tend to roll rather than bump over road irregularities, which would ultimately result in the loosening of parts, consequently lessening the length of service and increasing the operating cost.

Chassis frames of the pressed steel type are of greater flexibility than those of the solid channel construction.

Brakes. It is very essential that the brakes should be properly designed, and care taken to see that the drums provide sufficient bearing surface to cope with any emergency. This also tends to give the driver the feeling of security necessary for the proper operation of a motor truck.

Drives. Our equipment comprises the following types of drives:

Bevel-gear.
Internal-gear.
Chain.
Worm.

Up to recent years the chain drive has been the most popular. More recently acquired trucks are equipped with the worm drive, and its performance and upkeep to the present time have proved highly satisfactory under all weather conditions. However, it is not felt that we are in a position at this time to make a comparative statement as to the relative merits of these different types of drives.

Body Design and Construction of Heavy Trucks

The design of the truck bodies is a special problem in motor vehicles, requiring individual treatment in many cases according to the function of the particular car. In general it may be stated that any truck to be used to its best advantage by a construction gang should be so equipped that the floor of the body may be kept clear of tools, and left available for transporting material and men.

The bodies are equipped with stake side racks made in four sections, two on each side, with adjustable top rails, which, in conjunction with the beforementioned cross irons, serve to support the removable tarpaulin covering when in use. Any desired portion of the side racks may be removed if it is deemed expedient. The removal of the entire rack on one side of the car is sometimes advisable in order to permit side loading where it would prove difficult to back end-on to a freight car.

By removing the rear sections of the side racks on either side of the car, a clear platform space is obtained for installing a fifth wheel bumper in connection with the attachment of trailers. When a truck is used for general construction work, these side racks serve as suitable carriers for various ropes and tackles. Suitable brackets fitted to the outside of the racks furnish ample carrying space for ladders, pole pikes, digging tools, etc.

Wherever space is available at the sides or beneath platform, boxes are attached in which small tools and material may be stored.

Skid boards. Skid boards, with which all trucks of 4,000 pounds and greater capacity are furnished, are carried beneath platform of the body on special supporting irons.

It is possible to so fit out a truck that

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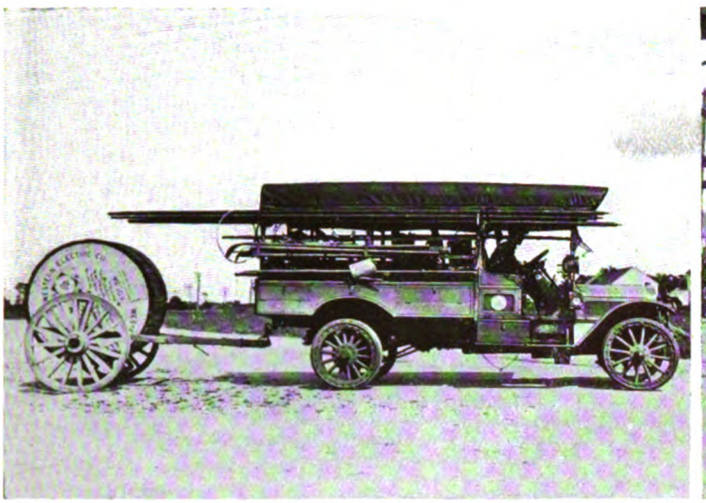
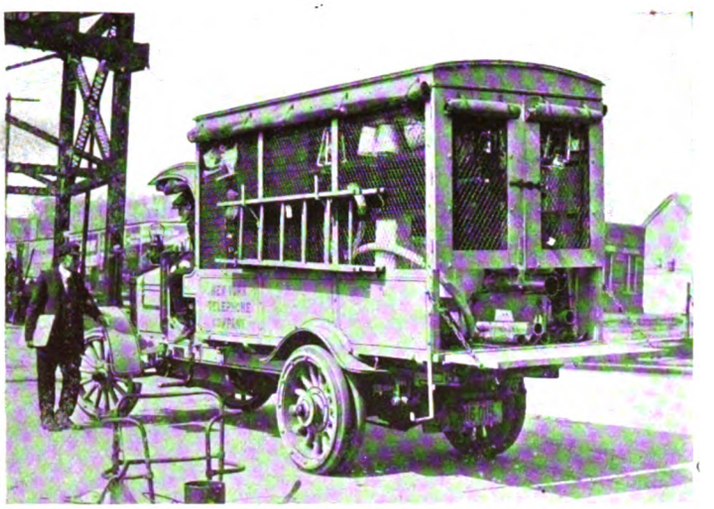


3,000 lb. Mack Construction Gang Truck Carrying 2,500 lbs. of Tools and Trailing a 4,200 lb. Reel of Cable



4,000 lb. Pierce-Arrow Cable Splicers' Delivery Truck

the platform will be left absolutely clear of all tools, even when in operation and fully equipped.

Floor space. In general on the 4,000 pound trucks, good practice indicates a platform space of 10 feet 6 inches in length, and a width of 43 inches when tool boxes are attached at the sides outside of the platform, and a width of 6 feet 6 inches when no tool boxes are attached. When a car is to be used principally for delivery purposes, the body should be of the latter type. Of course this width is controlled by the total over-all dimensions of the chassis from outside to outside of wheel hubs.

For trucks of 10,000 pounds capacity, it is desirable to obtain clear platform space of at least 13 feet in length, and 6 feet 6 inches in breadth, providing the overhang will not prove excessive. This minimum width is governed by the frequent necessity for carrying two reels of cable side by side.

Winches

All heavy trucks are equipped with winches arranged to be driven by the power plant of the truck itself. Experience indicates the following important characteristics in an automobile winch designed for general telephone construction work:

It should be flexible in its manipulation.

It should be entirely under the control of one operator, who would be the regular chauffeur of the truck.

Its control should be such that heavy loads can be lifted, held suspended, or lowered as desired, and at variable speeds.

It follows that the drum should be controlled through friction clutches of some type. *This is essential.*

It should be constructed of high grade material so that its weight may be reduced to a minimum—an important feature in applying the dead load of a winch to a 10,000 pound truck.

On two trucks particularly designed for heavy pole line work we have special winches each equipped with three drums.

Two of these drums carry respectively 150 feet and 2,000 feet of $\frac{3}{8}$-inch steel rope, and are fitted with contracting band type brakes, and cone friction clutches.

The third drum is not controlled by winch or brake, but revolves with the main winch shaft. It is fitted with a detachable outside flange which makes possible the removal in coils of rope or wire which may be wound on this drum.

The standard equipment provided for heavy trucks consists of a two-drum winch similar to the above equipment, with the exception that only one wire rope drum is provided, with a capacity of approximately two thousand feet.

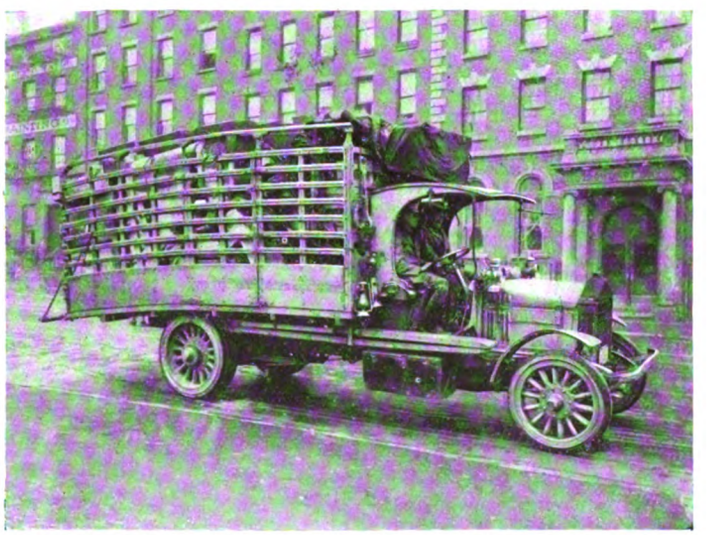
It is specified that the winch should be capable of exerting a pull of 5,000 pounds at a drum radius of 6 inches, and at a speed of 60 feet per minute. A factor of safety of 1.8 is specified to allow for the extra strain demanded in starting heavy loads.

The winch transmissions provide two-speed forward and one reverse.

Special Applications of Winch Power to Construction Work

With such equipment the loading and unloading of reels of cable weighing from

6,000 lb. Mack Truck Delivering Cable



10,000 lb. Pierce-Arrow Used for Western Electric Deliveries to New York Telephone Company's Storerooms

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two to five tons is easily accomplished. The loading of large heavy material, such as manhole heads, or concrete poles, is readily effected by this means.

Pulling aerial cable. The higher winch speed and large capacity of rope is utilized in the pulling of aerial cables; a single pull of 2,000 feet or more is easily made at a speed of from 175 to 200 feet per minute.

Pulling subway cable. The lower winch speed with the higher pulling power is utilized for all loading work, and for pulling heavy cables through underground conduits. Experience indicates that a considerable lower pulling rate is desirable here than when placing aerial cable; also that greater resistance is sometimes encountered, the average pull required being from 2,000 to 4,000 pounds, but occasionally running as high as 12,000 pounds.

Pole work. A number of trucks have been equipped with various kinds of derricks of the sheerleg and tripod types. These are sometimes utilized in the placing of loading pots and heavy underground equipment; but their principal function is in facilitating heavy pole line construction and maintenance. With derrick and winch, particularly where two power drums are available on the winch, poles may be erected, removed, shifted bodily with all attachments, replaced, and reset to new levels, at greatly increased speed, and reduction in total cost, over the old heavy gang methods.

There have been developed and used with considerable success boring machines for excavating pole holes, operated by the truck power.

Pumps. There is in operation in one public service corporation a special truck designed for subway cable placing, equipped with centrifugal pump operated by the truck motor and used to pump out water found in manholes, which would obstruct the cable placing.

Hydraulic jacks. The advisability of operating hydraulic jacks in connection with pole removal by means of a pump carried on the truck and driven by the winch transmission, is now under consideration.

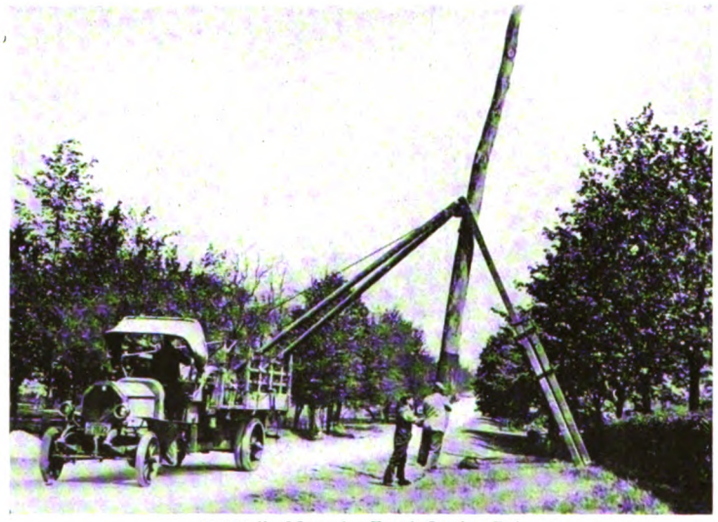
The value of winch in road difficulties. Of perhaps equal, but less recognized importance is the inestimable value of the winch as a means by which any truck so equipped may extricate itself from ruts or mud, no matter how badly mired. No wrecking crew need ever be sent to the trucks supplied with a good winch, one thousand feet of steel rope, and one or two good tackle blocks.

Showing Tools Racked on 10,000 lb. Mercedes So As to Leave Platform Clear for Special Pole Derrick Apparatus

It is felt that only a beginning has been made in applying the power of motor and winch to general construction work. With proper study many brilliant improvements and adaptations may be found for the power winch.

Trailers

Most of our heavy trucks are equipped with shackles at the rear, so that they may serve as tractors when desired. The possibilities along this line are beginning to be appreciated, although not yet fully developed. Any truck from a 4,000 pound capacity upward, when equipped with a suitable trailer can readily transport a load of poles, averaging forty feet in length, weighing five tons, at a rate of speed many fold that of horse drawn vehicles. The loading of a trailer is much more easily accomplished if winch power is available.



10,000 lb. Mercedes Truck Setting Pole

Trailers are now in use with light trucks for carting heavy reels of cable, which could not safely be loaded on the body of the truck itself. When used as a tractor carrying part of the load only, the average truck is capable of transporting loads from two to three times the normal rated capacity of the truck itself. There seems to be no difficulty in developing sufficient tractive effort to negotiate any reasonable road or hill conditions.

Garaging

The garaging of cars is an important feature, particularly where the work is scattered over such an immense territory. Every effort was made in selecting suitable points for garaging our vehicles to so locate them that the dead mileage would be reduced to a minimum. The main service station, the Long Island City garage, is located at Pierce and Eighth avenues, Long Island City, and repair sub-stations at Brooklyn, Newark, Manhattan, and Mt. Vernon.

In the repair sub-stations all of the maintenance repair work is done at night. Mechanics meet the cars when they come into the garages at the end of the day, take reports from the drivers of any emergency repairs required, and remedy these defects during the night, so that the truck is available for use on the following morning.

The main service station in Long Island City is equipped with every modern convenience for the repairing of automobiles. Here are done what are known as major repairs. Periodically every motor vehicle in the Company's service is brought to this point for general overhauling. A large stockroom is maintained here for supplying the entire field with spare units, parts, and equipment.

Inspection

An automobile inspector is assigned to each of the three divisions in the Metropolitan area. It is the duty of each man to inspect every truck in his territory at least once each month. At this time he makes any small adjustments necessary on the road, sees that the driver is giving his truck proper attention, and submits a report of the

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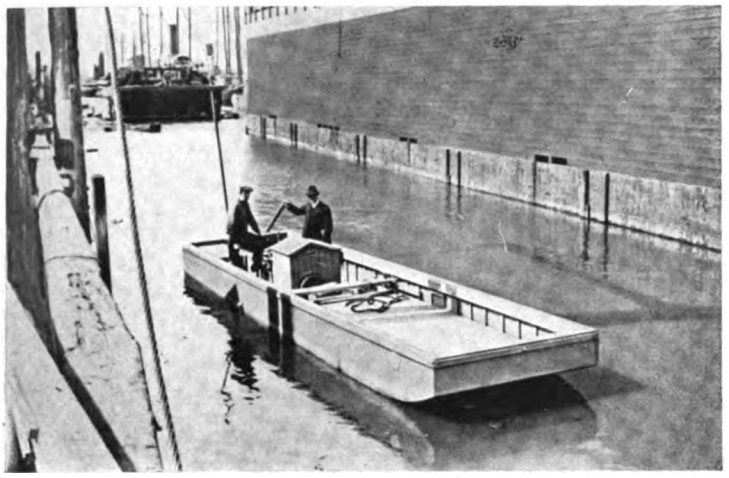

A special transportation problem. The construction of a new subway and cable system from Brooklyn to Hammels, across swampy land in Flatlands Bay and Barren Island, necessitated the delivery of very heavy material over very shallow water. This boat was built for that purpose. Its propeller revolves in a tunnel chamber above the waterline of the boat itself, which only draws 15 inches of water when carrying 6,000 pounds of material; 10 inches when empty.

result of this inspection to the supervisor of motor vehicles.

Such work as changing carburetors, magnetos, broken knuckles, springs, axles, or wheels, are all considered field jobs and are handled by men sent out from the central repair station.

The inspector has the authority to order any truck to the shop for such repairs as cannot be done on the road.

When a new truck is placed in service in any division, the inspector accompanies the driver until he is satisfied that he is competent to handle the truck. After it has been in service for one year it is ordered back to the central repair station, where a general inspection and any necessary repairs are then made. It is desirable that each vehicle should be taken down, and given a thorough overhauling after its first 20,000 miles of service, and thereafter it is periodically overhauled as required.

Abuses. Among the worst abuses to which motor trucks are subjected may be mentioned fast driving over rough roads, improper lubrication, and overloading.

The dangerous effect of overloading cannot be overestimated. An undue strain is put upon the motor and springs, the frame has a tendency to sag, the rear axle to bend, and the life of the tires is shortened, as their tread is not designed to withstand abrasion under a load greater than the rated capacity of the truck.

The accompanying map indicates graphically the general distribution and grouping of garages, storerooms, and vehicles.

The photographs, while not all of recent date, give at least a suggestion of various types of equipment necessary to meet some of the transportation problems peculiar to the telephone business.

Passenger Vehicles in Service in all Divisions of the New York Telephone Company

Make	Type	No. in Service	Average Monthly Mileage	Length of Service Months	Operating Cost per Mile (Gasoline, Oil, Tires & Repairs)
Indian	Motorcycle (Including 30 with side car attachment.)	232	900		
Ford	Runabout	218	809		$.061
Cadillac	Touring Car	1	1300	38	.095
Chalmers	Touring Car	1	1225	72	.099
Chandler	Touring Car	1	658	24	.040
Ford	Touring Car	1	780	38	.077
Locomobile	Touring Car	2	1260	74	.081
Maxwell	Touring Car	1	876	50	.095

Commercial Vehicles in Service in all Divisions of the New York Telephone Company

Car	No. in Service	Rated Load Capacity Pounds	Average Monthly Mileage	Average Radius of Operation Miles	Operating Cost per Mile (Gasoline, Oil, Tires & Repairs)
Ford Delivery Wagon	15	750	1053	8	$.073
Vim Delivery Wagon	10	1000	961	8	.065
International	3	1500	779	12	.076
Maccar	2	1500	1015	9	.119
Stewart	23	1500	1009	20	.068
White	7	1500			
Chase	3	2000	515	7	
International	3	2000	554	20	
Mack	9	2000	710	12	.132
Autocar	1	3000	713	10	.078
Mack	24	3000 and 4000	725	15	.136
Pierce-Arrow	13	4000		15	
Mack	6	6000	648	10	.274
Hewitt	1	10000	604	7	.308
Mercedes	2	10000	411	15	.112
Pierce-Arrow	10	10000	1027	20	.128

Radiations from the Telephone

EIGHT years ago the Albany *Times-Union* noticed the "cheerful telephone voice" and wrote the following editorial. It is as good advice to-day as it was then, and the more interesting in the light of the eight years' experience which has given it a fuller meaning:

THE TELEPHONIC VOICE?

"When talking speak in a moderate tone; . . . it is not necessary to talk loud."—Telephone Directory.

Did you ever notice how polite the average Albanian is when he talks over the telephone? No matter whether he is speaking to his sweetheart, his wife, a friend, a boon companion or a mere casual business acquaintance, his voice is invariably well modulated, even musical. His face is lighted up with an expression of happiness, there's a glint of pleasure in his eye and his entire manner is cheerful and courteous.

Now, what's the matter with cultivating just that tone of voice and that standard of courtesy and cheerfulness for use in our daily, personal contact with those people to whom we talk so politely over the telephone? Why should the telephone have the exclusive privilege of seeing our most engaging attributes of character?

If you have a happy thought pass it along.

Like the ripples on the waters of gladness, set in motion by the stone of playfulness, they will reach to the uttermost shore of the lake of life, catching the sparkle of the sun and reflecting the smile of a beautiful sky.

There is a sweet-voiced operator on my line whose breezy "good morning" sends a wave of cheerfulness over the wires which sounds as musical and as sweet-toned as the sigh of spring wafted across the strings of Nature's aeolian harp. I don't care whether she be as pretty as an artist's dream or as homely as an Indian squaw—the influence of her voice is none the less potential as a disseminator of happiness, or as a promulgator of mental sunshine.

Just notice next time you use the telephone how winsome the average telephonic inflection is. One ambitious to become a singer has his voice trained. Why not try to put the same musical cadences into our ordinary, workaday voices—to give to our daily companions the same poetic intonations, the same hearty, sympathetic tone we employ when "showing off" before the select audience at the church literary or the club smoker.

"We must be as courteous," says Emerson, "to a man as we are to a picture, which we are willing to give the advantage of a good light."

The small courtesies sweeten life. The great ones ennoble it.

You have seen beautiful swords of auroral flame dart into the zenith; you have seen marvelous flights of meteors, which were gone ere your admiration had given rise to a cry of pleasure. So it is with manners. They irradiate our presence, giving to our associates momentary views of those qualities which are universally loved and respected—gentleness, unselfishness, gladness and peace.

Let us cultivate the Happy Habit engendered by constant contact with the telephone. The music from a happy heart is the earthly echo of the music from the Celestial Choir.—William A. Allen in Albany (N. Y.) Times-Union, April, 1908.

A Narrow Escape

At two-thirty in the morning, after a primary election, a newspaper man was taken ill, and one of his associates rushed to the telephone to summon a physician, telling the operator it was a hurry call, and why. The operator, more hopeful than the overwrought returns-watcher, recognized the number as that of a local undertaker, and came to the rescue in time to prevent the patient's doom from being sealed.

MISS P. F. SQUIER, *Chief Operator, Elizabeth.*

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"What's In a Name?"

Audubon

By Dorothy Thorne

THE names of the telephone exchanges in New York, which are used so constantly in relation to practically all the business and pleasure of the great city, are rarely accorded time for consideration in any other light than that of their immediate connection with telephone efficiency. Each one of these names, however, has a store of interesting association intimately woven into the history of New York, and each has its own distinctive charm.

The name of Audubon, for example, is rich in suggestions of many pleasant things that make life lovely. This exchange takes its name from the celebrated naturalist, John James Audubon, whose passion for learning the varied habits of every wild creature he could glimpse in garden, wood, or meadow, opened limitless fields of delight for those who have come after him.

Audubon was born near New Orleans, May 4, 1780, and from his early youth was a passionate lover of nature. His father was a French sea captain—latterly the commander of a French man-of-war—and his mother was of Spanish descent. With the intensity of these two passionate races in his blood, his enthusiasm for observing nature burned unwaveringly throughout his life and sustained him through the bitterest hardships. Young Audubon spent most of his early years in France, but at seventeen he came to Mill Grove, the country estate owned by his father, near Philadelphia. It was here that he found the life he loved. He spent his days along the margins of the streams or in the fields and woods studying the habits of the birds and animals, and making sketches of them in every characteristic attitude. Here also he met Lucy Bakewell, the daughter of an Englishman whose property adjoined that of the elder Audubon, and in 1818 Miss Bakewell became his wife. Throughout the forty-three years of their married life she was a constant aid and inspiration to him, helping him in his work, and at one time taking a position as governess with a Southern family during an interval when his financial resources were at the lowest ebb. At his death she compiled a collection of his journals which give us some of the most delightful sidelights on his life and character.

Audubon devoted his life to studying the birds in their native haunts and putting into permanent form the results of his constant effort. His sketches and observations opened a new era in the bird science of this country, if, indeed, they did not virtually establish it. He made expeditions through Texas, Florida, Labrador, the Mississippi Valley, the Rockies; he explored with Daniel Boone, and he spent days and weeks alone in the wilderness, with little or no shelter from the wildest mountain storms, but in the intimacy which he loved with the furred and feathered householders all about him.

He discovered many previously unknown species, and revealed a wealth of new facts about the habits of the birds already known, and about their coloring and marking. So well did he come to know each variety that his drawings, which are life size and scientifically accurate, show the birds in the varied positions most natural to them—as John Burroughs says, in their "most characteristic and instantaneous attitude." The pictures show, too, in detail the surroundings each bird loves best. The red-berried dogwood bough, or the anemones and spring beauties of the North, or the brilliant orchid or fluffy cotton boll of the South—in infinite variety the world of plants is shown, for without their natural setting Audubon's pictured birds must surely have been lonely, and it is the birds at home that he studied and painted. And so one picture often shows a whole comedy or tragedy—a drama which is perhaps going on at this very minute in our own backyard or in the nearest patch of woodland. The fascinating familiarity with the birds, the delight of a speaking acquaintance with even a few of the shy choristers or with the robust little good-fellows that hail us as we swing by on our morning walk—this inexhaustible source of pleasure which is now so easily ours, Audubon was first to put completely within our reach.

In 1839 Audubon returned from England, where he had been at intervals during the completion and publication there of his great work, "The Birds of America." He settled in New York on an estate which he named "Minniesland" after Mrs. Audubon, whom he always called by the Scotch word for mother, "Minnie."

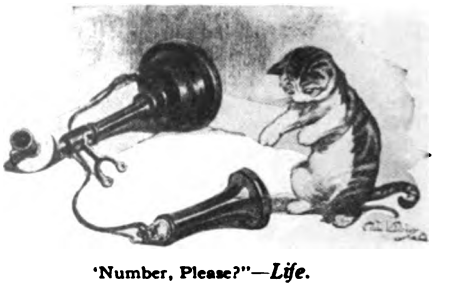
Minniesland extended from what is now Amsterdam avenue to the Hudson River, and, as there was then no railroad along the shore, the waves sung just beyond the edges of the lawn, and the naturalist could study the rhythmic, busy little sandpipers who patrolled the narrow, pebbly strand, or the handsome kingfishers flying from tree to tree along the river's edge. The house is still standing near 156th street, and part of the estate has been preserved in what we know as Audubon Park, extending from Broadway to Riverside Drive, and from 155th street to 158th street. Parke Godwin, an eminent editor and essayist, describes the place as it appeared when he visited Audubon there:

> The house was simple and unpretending in its architecture, and beautifully embowered, amid elms and oaks. Several graceful fawns and a noble elk were stalking in the shade of the trees, apparently unconscious of the presence of a few dogs. . . . Nor did my own approach startle the wild, beautiful creatures, that seemed as docile as any of their tame companions.

It could not have been otherwise at the home of Audubon, who had spent his life winning the confidence of every kind of wild creature.

If we pause sometimes in Audubon Park even now, we may meet there some of the feathered folk for whom the naturalist's enthusiasm and love were so abundant. A wood thrush, Audubon's favorite, may alight there on his way to the deep pine aisles of New England, and we may even have the thrill of the rich notes flooding into liquid melody of which Audubon writes with such ecstatic delight and tenderness.

On January 27, 1851, the great naturalist died at his home, and was buried in Trinity Cemetery which adjoins the Audubon property. The park and avenue which bear his name, the monument which has been erected to his memory, these are far less truly reminders of him than the quicker appreciation of bird life which his spirit and work have left with us. To know more fully of the unending variety of ways in which the birds are serving mankind, to feel the keen joy of acquaintance with one throbbing bundle of song and sunshine we had not met before, this is really to perpetuate the work of Audubon. And it is to know that a whole world of satisfying pleasure and lasting interest is open to us whenever we may claim it.



'Number, Please?"—*Life.*

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The Sterling Mine

How It Wrought a Stanch Guardian of Our National Safety in the Revolution and Has Added Through Succeeding Years the Improvements of Science and Invention

By J. W. Ritchings, Jr., Salesman, Nyack Commercial

A Section of the Original Chain Which Was Stretched Across the Hudson River Near West Point in 1778 This Chain Is Now on the Lawn of the Hewett Homestead, Ringwood, N. J.

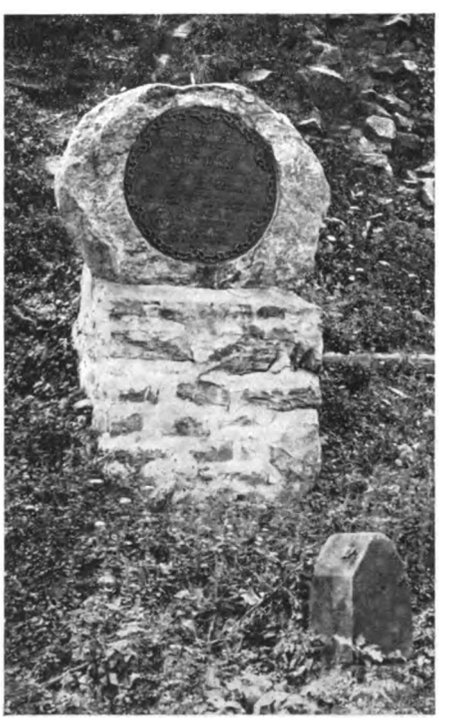
WHEN, in 1776, Washington saw three British ships of war pass up the Hudson without suffering any interruption from the obstructions that had been placed across the river, nor from the fire of Fort Washington and Fort Lee, all he could do was to send warning to General Clinton in the Highlands, and the other American forces, farther up the river, to be ready. When in October, 1777, the iron chain which had been stretched across the river between Fort Montgomery and Anthony's Nose was broken by the British ships, the enemy captured Fort Montgomery and Fort Clinton and sailed on up the river, to burn the town of Kingston. A second barrier had failed to stop the enemy, and it was too late to save the river towns.

When the defeat of Burgoyne at Saratoga mercifully prevented the union of the two British forces (Burgoyne from Canada, and Sir Henry Clinton, who had ascended the river as far as Kingston, but was obliged by Burgoyne's defeat to return to New York), one more chance remained to keep the British out of the Hudson Valley, which was the master key to the colonies. To make safe this final chance Washington made it clear that no effort must be spared. He wrote to General Putnam:

I . . . request you, in the most urgent terms, to turn your whole force and all the means in your power for erecting and completing, as far as it shall be possible, such works and obstructions as may be necessary to defend and secure the river against any future attempts of the enemy. You will consult Governor Clinton, General Parsons, and the French engineer, Colonel Radière, upon the occasion. By gaining the passage, you know the enemy have already laid waste and destroyed all the houses, mills and towns accessible to them. Unless proper measures are taken to prevent them, they will renew their ravages in the spring, or as soon as the season will admit, and perhaps Albany, the only town in the State of any importance remaining in our hands, may undergo a like fate and a general havoc and devastation take place.

To prevent these evils, therefore, I shall expect that you will exert every nerve and employ your whole force, in future, while and whenever it is practicable, in constructing and forwarding the proper works and means of defense.

To carry out these injunctions no halfway measures were possible, and after conference and discussion with Robert R. Livingston and several other of the most highly qualified men, it was decided that West Point, where the Hudson makes a double turn, should be the place chosen for the obstructions and fortifications.



Remains of the Old Sterling Furnace and Tablet Placed June 23, 1906, by the Daughters of the Revolution of the State of New York; also a Large Hammer Used in the Manufacture of the Chain

The place being determined upon, it remained for a means of obstruction to be found which would not go the way of the previous ones, and let the enemy pass without a murmur. At the direction of Washington the matter was taken up by Mr. Peter Townsend, proprietor of the Sterling Iron Works, who held the opinion that an iron chain strong enough to prevent any ship from passing up the river would be practicable and adequate.

Accordingly the iron for this chain, whose staunch links must stand between the precious Hudson Valley and the enemy who if they could once grasp it would wrench the Colonies apart, was mined from the Sterling mine, smelted at the Sterling furnace, wrought at the Sterling forge into bars varying from 2½ to 3½ inches square, and finally was welded there into links about two feet long. The workmen engaged in producing the Sterling iron were exempted from military duty in order that deliveries of this indispensable contribution to the defense of the new nation might not be delayed.

The chain was 500 yards long and weighed 186 tons. It was of course too heavy to be carried to the river whole, so it was sent over the mountains, two or three links at a time, on ox carts and on mule-back. Forges at the river contributed their share by welding the links together. The great chain, supported on logs at just the proper distance below the surface, and anchored firmly with anchors of Sterling iron, was placed between West Point and Constitution Island, on April 30, 1778. It did its work well and no British ship gained access to the upper Hudson by breaking or evading it. When it was removed in 1783 after the declaration of peace, it was unbroken, and the great links are still to be seen at West Point, at the home of Mr. Macgrane Coxe at Southfield, and at various other places in New York State.

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THE mine which supplied the great West Point-Constitution Island chain is in operation to this day.

Sterling Mine is located in Rockland County, midway between Tuxedo and Greenwood Lake. The Sterling Iron & Railway Company operates a branch railroad from Sterlington, N. Y., on the main line of the Erie Railroad, to the mine, and it traverses, in a most circuitous route, a very picturesque section of Rockland and Orange Counties for a distance of about seven miles, passing en route Sterling Furnace, erected in 1848 at Sterling Pond. The ruins of this furnace are still to be seen near the highway about midway between the Sterlington railroad depot and Sterling Mine.

History

The old Sterling furnace, where the great chain was forged, was erected in 1751 by William and Abel Noble and its ruins may be seen to-day at the south end of Sterling Lake. Here the Daughters of the Revolution have placed a tablet in commemoration of the furnace and the making of the chain. The inscription states:

> This furnace is believed to have been the first place in the State of New York in which iron and steel were manufactured in quantity.
>
> From the iron here produced was manufactured in 1778, by Peter Townsend, the great chain put across the Hudson River near West Point to impede the progress of the British warships up the river, and the first anchor made in New York State was here manufactured in 1773.

The possibilities of productive iron mining on this site were first suggested about 1735, when Cornelius Board, in the employ of a London Company (while prospecting for gold and other valuable metals in what was then known as "Northern New Jersey"), came upon iron ore in great quantity and of very high grade at what is now Sterling Mine. About ten years later (1745) a company organized as the "Sterling Iron Works" began operations on what became the Sterling Estate, William and Abel Noble, and later Noble, Townsend & Co., being the proprietors.

Skip Unloading at Top of Mine Shaft

Methods

In those early mining days, dynamite,

Shaft of Mine Showing Two Miners Ascending After Day's Work

caps, fuses, and drills were unknown and a rather primitive mode of mining was in vogue. Black powder was placed on the spot which was to be blown up, a long straw was lighted and the unlighted end placed over the powder; in due time the powder would become ignited and part of the time at least the desired result was obtained. We can well imagine that progress was extremely slow.

The mine shaft, sloping at an angle of 18 degrees, descends 3,000 feet, and has a vertical depth of 500 feet under the center of Sterling Lake. Two shifts of about ninety men each, working day and night, with improved electrical equipment handle about 500 tons of ore per day. The ore and rock is brought to the crusher and picking house by means of "skips" or mine cars and conveyors, where it is sorted and the ore deposited in large cars, ready for shipment. Practically the same number of miners are employed to-day as there were fifty years ago, but because of the introduction of modern machinery and electricity the annual production has been increased from 2,000 to over 100,000 tons of ore.

Until recently steam pumps, steam hoists, etc., were in use, but to-day they are replaced by modern electric equipment. The electrical power is furnished by the Harriman Power Plant, at Harriman, N. Y., and is brought to the mine across the mountains, a distance of ten miles. The mine office and all the buildings are well lighted by electricity.

The ore is made into foundry irons, anchors, chains, nails, etc., and put to practically the same uses that it was in the early days.

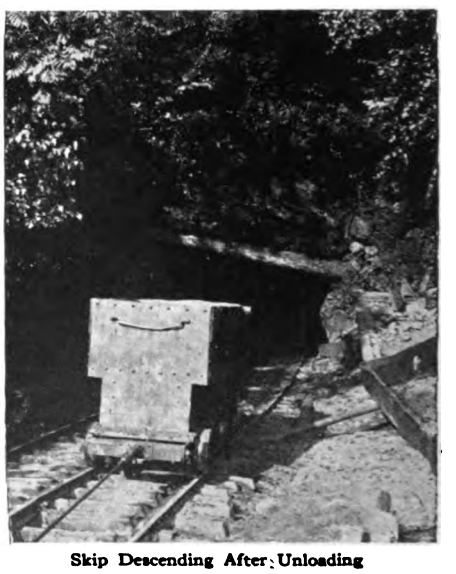
The Telephone in the Mine

The expeditious manner in which the work at the mine is carried on is due largely to the modern telephone equipment, which was installed there in 1912. The mine office is located a short distance from the shaft entrance, and a young lady timekeeper located there operates a monitor switchboard connected to our Sloatsburg central office, about seven and a half miles away. The extension stations, connected to the switchboard, are located as follows:

1 station at a point 1,600 feet underground.
1 station at a point 2,200 feet underground.
1 station at a point 2,600 feet underground.
1 station at a point 3,000 feet underground.
1 station at Community House, one and one-half miles from mine office.
1 station at Superintendent's office.
1 station at hoist house at top of mine shaft.

The four instruments in the mine are special Western Electric mine sets, inclosed in iron boxes. The general superintendent advises us that occasionally while he is down in the mine, his New York office calls him up and he talks from these mine sets with ease and satisfaction. The telephone in the mine is of great service in ordering tools, dynamite, summoning aid in case of accident, and it is constantly effecting a great saving in time.

Much of the above data was gathered through the courtesy of Mr. B. Moffatt, Jr., and Mr. Macgrane Coxe.



Skip Descending After Unloading

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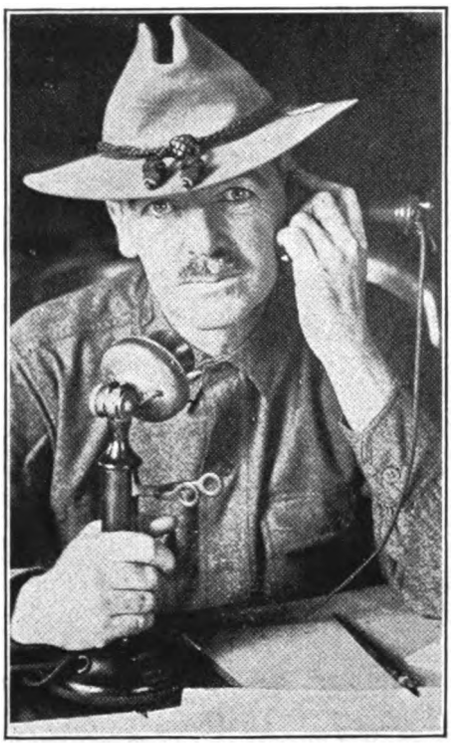
Mobilizing the Guardsmen

How the Telephone Was Used to Speed up the Concentration of Troops

WHEN the President called out the militia, a little before midnight on Sunday, June 18, there was one agency to which those who were responsible for the mobilization knew they could turn at once in the swift work of ordering out their men. From one end of the country to the other the telephone wires began to be busy making the myriad arrangements that were necessary. Telephone wires buzzed for supplies of every description; telephone wires vibrated with conferences and orders, telephone wires hummed softly with the news that camps were calling.

In New York State, where the task of mobilization was the greatest, it was expected that 17,000 men would be in camp within five days after the call came. How could this be done? Whatever else may have been involved, certain it is that not even the plans could have been made, much less the arrangements carried out, if the telephone had not been in constant use. The Twenty-second Engineers were among the first to be ready—they had received their orders by telephone on Sunday night just after Governor Whitman had received the word from Secretary Baker, at 10.45 P.M. The Sixty-ninth, the first to leave New York City in a body, had much of its swiftness and efficiency of mobilization to attribute to the telephone. Colonel Louis D. Conley, of this regiment, was one of the first to receive the order. He immediately called up James Mullans, the armorer, on the telephone and ordered him to telephone the word of mobilization to the men. Two hours later every man in the regiment had been ordered out.

The officers in charge of the mobilization as a whole have been constantly dependent on the telephone in handling the stupendous undertaking with such record-breaking speed. General O'Ryan, after being in almost constant touch with the organization of the National Guard throughout Monday night, the nineteenth, got General Leonard Wood on the long distance telephone and went over the situation with him in the early morning of Tuesday. Governor Whitman, just before leaving New York State for Massachusetts, where he was to deliver an address on Tuesday, received official reports from General O'Ryan and Adjutant-General Stotesbury by telephone. One of the first measures to be taken to facilitate the mobilization was the installation of special telephone wires at General Stotesbury's office. "By this means," says the report, "the adjutant-general's office can be kept in almost constant touch with every part of the State." The order for immediate installation of telephone equipment at Camp Whitman was received by our men in the Hudson Division early Monday morning. A line of poles was already available and by six o'clock that evening crossarms had been placed, three miles of wire run, and the line was working into Poughkeepsie. By the night of the twenty-third a two-position switchboard was working with 3 direct lines to New York, 5 to Poughkeepsie, 1 to Pawling, 1 to Beacon, and 1 to Hopewell Junction, with wires to all parts of the big encampment, taking care of the local service.



COLONEL JOHN D. FRASER
First Regiment of New Jersey
At his characteristic occupation during the mobilization.—*Newark Evening News.*

In New Jersey it was the same. The order from Secretary Baker was received by Governor Fielder over the telephone. The text of the order for the State-wide mobilization of the militia was approved over the telephone by Governor Fielder, so that it could be immediately transmitted throughout the State without waiting, while the messenger took the document to Jersey City, where it had to be signed, and back to Trenton. At the militia encampment at Sea Girt the news came at 12.15 Monday morning, when a megaphoned shout, "General Hine wanted on the telephone," aroused the camp. In a few moments General Hine had returned from the telephone and gathered his officers about him to hear the expected announcement.

In one New Jersey town at least, a bugler was sent through the streets before daylight, but it was the quiet, efficient method rather than the spectacular, that was generally adopted, and most of the guardsmen were notified by telephone, each officer telephoning to his immediate subordinates, right down the line. It was these businesslike methods which characterized the mobilization from the first, and were responsible for New Jersey's splendid record of completing her mobilization in three days.

Although the order for mobilization had not been unexpected by the officers of the National Guard, and consequently the supplies and equipment were in good shape, nevertheless there was enough to be done in the way of providing additional accoutrement to overtax less well-telephoned officers than those of the Guard. They managed the infinite detail of the purchasing with speed and dispatch, largely over the telephone. Colonel Bostwick, assistant to Adjutant-General Stotesbury, found it necessary to purchase twenty-two motor trucks. He got into communication with a concern which had 500 such trucks all ready to ship to Russia. "You can have as many of those machines as you want," he was told. "A couple of hundred of them will be at your service, if the National Guard of New York needs them." But an option on the twenty-two was all that was needed until Colonel Bostwick got the State comptroller at Albany on the telephone wire and asked him for an allowance of $75,000 to pay for the trucks and some other supplies. This is typical of the rapidity with which the necessary steps were taken to equip the 600 acres at Camp Whitman to receive the 17,000 men and care for them properly when they assembled. Fifteen thousand pounds of beef had to be ordered and a field bakery established, capable of supplying 15,000 loaves of bread a day.

The news of the call was published in the newspapers Monday morning, and this was the first information that many of the guardsmen had of the sudden change they would have to make in their affairs. And their readiness was apparent in the early hours of Monday, for the telephones at the various headquarters began to ring with inquiries from the men who had seen the news and wanted to know if they should report at once or if not, at what hour. In many cases the official information had been sent out to the men of the companies by telephone, and in other cases the men them-

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selves sought their instructions by telephone.

Over long stretches of open country, through the crowded hearts of cities and up the lazy streets of suburban towns, into tall office buildings, and to quiet homes, the messages were hurrying past each other from the moment the first word came. Unconscious of each other they were as they darted here and there in crowds, and singly, some only the routine of arrangements, many the very backbone of the mobilization. But everywhere telephone wires went the calls sped.

Among those to whom these messages sped were Bell telephone men everywhere throughout the country. "He serves his company best who best serves the public," and whether at their daily work in offices or elsewhere, under the emblem of the Blue Bell, or perchance in camp, or on the firing line with the Stars and Stripes waving o'er them, our boys may be relied upon to serve well their company and their country.

With Bell telephone service, both wire and wireless, the United States is better prepared than any other nation, with an adequate means of communication.

Bell System Provides for Its Men at the Front

That the Bell System stands ready, not only with unexcelled facilities of communication at the disposal of the United States, but with generous provision for those employees who are called directly into the military service of their country, was made known by the following announcement, dated June 21, 1916:

AMERICAN TELEPHONE AND TELEGRAPH COMPANY.
15 DEY STREET, NEW YORK,
June 21, 1916.

The Companies constituting the Bell Telephone system have agreed upon the following:

Employees of the Bell System who, on the eighteenth of June, 1916, were members of the National Guard or Naval Militia, and who have been called into service by orders issued in accordance with the proclamation of the President of the United States of that date, or who may be called into service by similar order, will be allowed full pay, at the normal rate in effect on that date in each case, during absence in such service not to exceed three full months and the fraction of the month in which called into service, and thereafter, for a period not exceeding nine additional months, full pay at such rate less the amount in each case paid by the Government.

Such employees will also be considered, for the purposes of the Employees' Benefit Plan, as being continuously employed in the System while absent on such duty, and upon return from such duty, after honorable discharge, will be given such employment as the needs of the service will permit and the employee is able and fitted to perform.

Owing to the importance of our service to the Government and the public in time of war, we must take care not to cripple it. Therefore, the names of those who are willing to enlist hereafter will be noted, and, if subsequently desired by the Government, we will aid in supplying skilled men for the particular service for which men specially trained are required. Those who hereafter enlist with the Company's approval, will be treated in the same manner as employees who were members of the National Guard or Naval Militia on June 18, 1916.

Further consideration, in due time, will be given to the matter of service beyond the period herein provided for.

In case the State or Nation makes provision for dependents of the men in service, or the situation is otherwise substantially changed, this arrangement may be modified as, in the judgment of the Companies, the changed conditions may warrant,

U. N. BETHELL, *Senior Vice-President.*

Syracuse Installation and Outside Trouble Forces

THE area covered by the Syracuse installation and outside trouble forces is comprised of the outlying exchanges of Fayetteville, Solvay, Liverpool, Cicero, as well as the city of Syracuse—Warren and James. At the close of April, this year, there was in this district a total of 11,441 lines and 21,464 stations, of which 572 are rural line stations. The Outside Trouble Force and Installation Department which look after this plant are shown in the photographs reproduced herewith.

The Installation Department is at the present time exceptionally busy with spring removal orders, which during the rush months of the spring, constitute about two-thirds of the orders handled.

Syracuse Outside Trouble Force, 1916

Syracuse Installation Department Force, 1916

Owing to the number of farmer line stations working through these exchanges, almost the entire time of two outside troublemen is devoted to clearing trouble on them. The duties of the installation force are also appreciably augmented by numerous farmer line pole and installation jobs.

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Technology Telephones

Massachusetts Institute of Technology Alumni in Thirty-five Cities Hold Reunion by Telephone

Some of the 2,784 Alumni and Guests at the Banquet of the M. I. T. in Boston Participating in the Nation-wide Demonstration of the Bell Telephone, June 14, 1916

CARTY'S HALL on June 14 was the scene of a nation-wide use of the telephone in which simultaneous and continuous communication was maintained between a larger number of cities than had ever before been thus united. Their geographical separation only enhanced the achievement of bringing into personal intercourse the distant places which have a common interest.

Thirty-five cities, the most distant being 4,850 miles apart (Seattle and New Orleans), were connected by 74,532 miles of wire, along 16,429 miles of poles and through 460 miles of underground cable, and 4,815 alumni and guests of the Massachusetts Institute of Technology conversed, sang songs, cheered, and pledged money for the new Institute buildings, just as intimately and sociably as the most commonplace telephone conversations are conducted and the most enthusiastic meetings are held under ordinary circumstances.

The cities which participated, and the number present in each, follows:

1.	New York, N. Y.	130
2.	Schenectady, N. Y.	42
3.	Syracuse, N. Y.	78
4.	Rochester, N. Y.	78
5.	Buffalo, N. Y.	35
6.	Philadelphia, Pa.	195
7.	Washington, D. C.	50
8.	Atlanta, Ga.	50
9.	Birmingham, Ala.	224
10.	New Orleans, La.	20
11.	Harrisburg, Pa.	35
12.	Pittsburgh, Pa.	25
13.	Akron, O.	60
14.	Cleveland, O.	30
15.	Detroit, Mich.	30
16.	Dayton, O.	65
17.	Indianapolis, Ind.	70
18.	Cincinnati, O.	39
19.	Louisville, Ky.	25
20.	Chicago, Ill.	80
21.	Milwaukee, Wis.	40
22.	Minneapolis, Minn.	36
23.	Duluth, Minn.	40
24.	Urbana, Ill.	28
25.	St. Louis, Mo.	35
26.	Kansas City, Mo.	90
27.	Denver, Col.	31
28.	Salt Lake City, Utah	25
29.	Anaconda, Mont.	25
30.	San Francisco, Cal.	31
31.	Los Angeles, Cal.	25
32.	Portland, Ore.	30
33.	Spokane, Wash.	63
34.	Seattle, Wash.	93
35.	Boston, Mass.	2,784
	Total	4,737

This was another demonstration of what Mr. Bethell said in his remarks to Secretary Daniels on the occasion of the mobilization of the forces of communication of the Navy Department: "I should like to point out that while the headquarters for this particular test are in Washington, they might be shifted to any other important place in the country, and the test could be made from there with equal facility."

The headquarters for the great demonstration of nation-wide telephony on June 14 was Boston, and the occasion was the alumni banquet in connection with the celebration of the fiftieth anniversary of the founding of the Massachusetts Institute of Technology, and the dedication and acceptance of the group of new buildings on the Charles River which will be the future home of the Institute.

President Stone's Tribute

President Charles A. Stone of the Alumni Association presided, and in introducing Mr. Carty to the audience, which was assembled in thirty-five cities, said:

We are gathered here this evening to celebrate the fiftieth anniversary of the activity of the Massachusetts Institute of Technology. Pure science and technology have combined to make possible in 1916 many things which in 1866 the most courageous prophet would not have dared to predict.

Perhaps the most marvelous of all the achievements of science is the power to transmit the human voice three thousand miles and more. The courtesy of the American Telephone and Telegraph Company has made it possible for us to speak this evening, not only to the alumni

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Portion of the M. I. T. Alumni Gathering in New York, June 14, 1916

and guests in Boston but also to the alumni gatherings in thirty-four cities in different parts of the United States.

We are honored by having with us at this banquet a man who has been active in the Telephone Company since its inception, and to whose genius much of the marvelous development in long distance telephony is due. I take pleasure in presenting Mr. J. J. Carty, chief engineer of the American Telephone and Telegraph Company.

Mr. Carty's Talk

Mr. Carty responded as follows:

To-night, in recognition of its great debt to the Institute and to its graduates, the telephone art does homage to Technology.

The telephone system of America, planned and built with the aid of Tech engineers by the hundreds, is vibrating, in all its parts, with the thrilling words of congratulation and achievement coming to the Institute from its graduates everywhere attending this great continental reunion.

Nothing could be more pleasing to us men of the telephone than to acknowledge by this demonstration our gratitude for the great services you have rendered to our art and to testify to our faith in even greater achievements which you are to attain in the fu ure.

I wish I could call the roll of the Tech men who have made notable contributions to telephony, but there are so many things now to be done that I must pass on by saying that Tech men are everywhere in charge to-night.

This great undertaking is in their hands, and I am proud to announce that my distinguished colleague, Mr. A. W. Drake, '95, is in supreme charge of the thousands of men and the tens of thousands of miles of wire p aced at your service to-night by that great and loyal Tech man, Theodore N. Vail. I now turn over the command to Mr. Drake, of the class of '95.

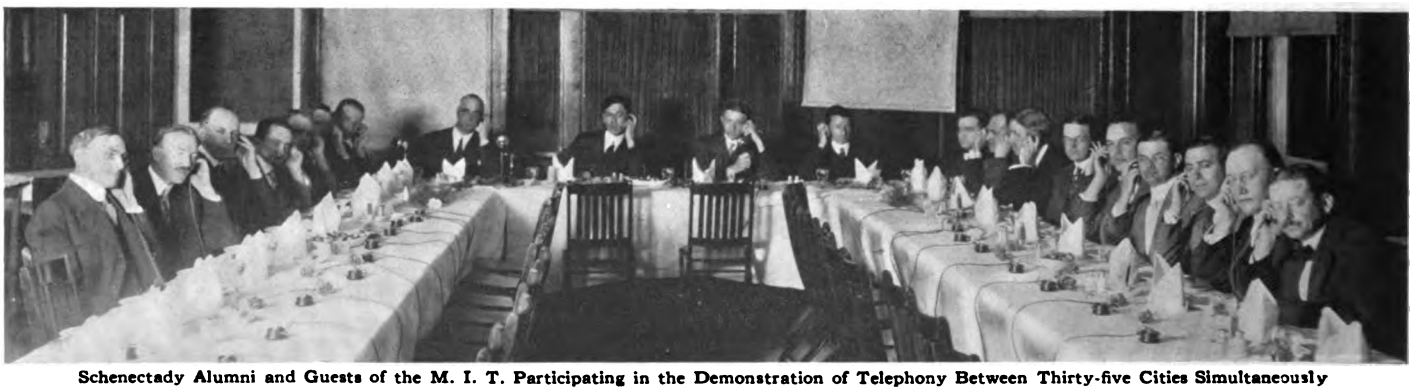
The Proceedings

Mr. A. W. Drake, '95, Assistant Superintendent of Plant, A. T. & T. Co., then called the roll of the cities present, and presided over the telephonic ceremonies. Then after introductory remarks by President Stone, addresses were made over the telephone by Dr. R. C. Maclaurin, president of the Massachusetts Institute of Technology; Dr. Michael I. Pupin; Dr. Alexander Graham Bell, and Mr. Orville Wright. Greet ngs were exchanged between Professor C. R. Cross, of Boston, and Professor Harris J. Ryan, of San Francisco; Dr. A. Lawrence Lowell, president of Harvard University, Boston, and Dr. Harry P. Judson, president of Chicago University, Chicago; and between President Stone, of Boston, and Judge Thomas Burke, Seattle, Wash.; Mr. Coleman duPont, an alumnus and a generous benefactor of Tech, also made a short address. The Stein Song was appropriately sung in Milwaukee. Dr. H. S. Pritchett, president of the Carnegie Foundation for the Advancement of Teaching, made an address to the audience in Boston, and while he was delivering it, Mr. W. F. Schmidt, of the Advertising Department, New York Telephone Company, read it over the telephone in Boston to all the other cities.

One of the features of the evening was the cheering, which was well organized. Mr. H. W. Goddard, '04, the cheer leader, was stationed at the Tech Club, New York. First he would call for cheers from the North, then the South, then the East, then the West, and the cities would respond in the following groups:

North	
Akron	Chicago
Cleveland	Milwaukee
Detroit	Minneapolis
Dayton	Duluth
Indianapolis	Urbana
South	
Washington	New Orleans
Atlanta	Cincinnati
Birmingham	Louisville
West	
St. Louis	San Francisco
Kansas City	Los Angeles
Denver	Portland
Salt Lake City	Spokane
Anaconda	Seattle
East	
Boston	Rochester
New York	Buffalo
Schenectady	Harrisburg
Syracuse	Pittsburgh
Philadelphia	

When each group had cheered separately, they would all cheer together, and to hear the long M. I. T. cheer coming from nearly five thousand throats in all parts of the country was wonderful.



Schenectady Alumni and Guests of the M. I. T. Participating in the Demonstration of Telephony Between Thirty-five Cities Simultaneously

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Alumni in Syracuse Attending the Nation-wide Celebration of the 50th Anniversary of the M. I. T. June 14, 1916

At the close of the evening Dr. Maclaurin called the roll of all the cities and said good night. Each responded, as it was called, with a felicitous expression of congratulation to him and to the Institute.

The last number on the program was "TheStar-Spangled Banner," played in Washington, D. C., every member present standing the while. President Stone was so impressed that he requested it be played again that the alumni all over the country might join in singing it.

After the formal proceedings, many lingered at the wire to hear the reports of the contributions that were coming in. A mysterious "Mr. Smith" was announced as giving $5 for every $3 the alumni raised, up to a limit on his part of $3,500,000, and before the evening was over a total of $2,666,666 was raised.

ABOUT 130 alumni and guests gathered in the Technology Club, New York City, to participate in this great meeting. When the roll calls of cities were made in Boston, Mr. Walter Large, '79, responded. Mr. R. H. Street was the company representative in charge.

In Schenectady forty-two were present at the Mohawk Club, where a banquet was spread. The chairman was Mr. W. C. Arsen, '01, and Mr. F. M. Cozzens, local manager, was the company's representative.

In Syracuse seventy-eight Tech men gathered in the rooms of the University Club and were presided over by Mr. J. R. Vedder, '07. Mr. L. J. Parker, district traffic chief, represented the company.

In Rochester, also, there was a banquet in connection with the meeting. Seventy-eight alumni and guests were present. Mr. H. H. Tozier, of the Eastman Kodak Company, presided, and Mr. W. J. O'Hea, district manager, represented the New York Telephone Company.

In Buffalo there were thirty-five members and guests who met at the University Club. Mr. B. F. Potter, president of the local alumni, presided, and was assisted by Mr. H. C. Stephan, local manager, Buffalo.

Western New York Alumni at Buffalo Participating in the Telephone Reunion of the M. I. T., June 14, 1916

It is appropriate again to revert to Mr. Bethell's remarks addressed to Secretary Daniels, wherein he said: "It is only by harmonious coöperation, by close and continuous team work, that our organization has been able to build up and put upon an efficient basis the system of communication which we place at your service. Most essential of all in accomplishing results is the spirit that actuates the organization."

The alumni of the Massachusetts Institute of Technology are all men of science, and as such can appreciate how perfectly the words of Mr. Bethell were demonstrated by the Bell organization as a climax to the ceremonies marking the half-century of their alma mater.

The Voice With a Smile

THE cover of THE TELEPHONE REVIEW for February elicited some comment of uncommon interest from various sources, and collected some further observations on the beneficent internal effects of the voice with the smile. The Hudson Falls *Herald* quotes part of the editorial on the cover, from February TELEPHONE REVIEW, and adds:

Now, then, why not the face with the smile? In some localities the slogan is, "Start the day with a smile". . . If you can smile until after ten o'clock in the morning you are pretty sure to put in the right sort of a day, and win out, for

"It's best to keep a-smilin',
For a smile's a kind of net
That catches by beguilin'
Just the things it wants to get.
So keep your smile a-spreadin',
Crack a jolly joke or two,
And you'll find that things come headin'
Straight for smilin' folk like you."

Alumni of the M. I. T. and Their Guests Assembled in Rochester, but Virtually in Boston, at the 50th Anniversary Celebration, June 14, 1916

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Main Society

Two Big Meetings All Ready Planned for Next Season

THERE can be no "weasel words" or "pussy-footing" if the newly elected executive committee ever hopes to provide a meeting of the Society equal to the wonderful night of May 19.

No one realizes this more than the members of the executive committee themselves. Therefore, at the call of the new president, Mr. I. J. Thorp, the committee met June 15, to consider a number of suggestions for next season. The meeting lasted all the afternoon. Every phase of the situation was considered. It was recognized that the responsibility is up to the committee and that it is possible to get an attendance of nearly 100 per cent. of the membership out at the meetings if the hall is big enough and the attraction is there. On the other hand, it has been proved time and again that the size of the attendance does not always indicate the degree of the importance of a meeting, or the amount of good that speakers accomplish when addressing only a few hundred members who are interested in some particular phase of the business that is being discussed.

The question for the executive committee to decide, therefore, is how to accomplish both of these objects, and provide meetings which will be of general interest to all the members and of special value to as many as possible.

The committee thinks it has at least a partial answer to the problem, and hopes to have it all decided before the next season begins.

Already two meetings have been planned which are bound to be thrillers. The first will open the season in October, and the other will close it in May or June. Surprises they are, both of them, and utterly unlike each other, which goes to show that if two were hit upon at one meeting of the executive committee, Mr. Thorp and his associates cannot have exhausted all their ingenuity.

It is too early to make any announcement of what they are to be, but remember this, the Society will celebrate its twentieth birthday next October, and you want to be there.

Application blanks for new members may be had of the Secretary, 15 Dey street.

Hudson Section

THE closing meeting of the season 1915-1916, was held in the Banquet Hall of Keeler's Hotel, Albany, on Thursday evening, June 8. The annual reports of officers were given and the following new officers and executive committee were elected for the season 1916-1917:

Chairman, C. E. White, New York Tel. Co.
Sec'y-Treas, H. R. Rupley, New York Tel. Co.

Executive Committee

F. L. Arland, New York Tel. Co.
E. W. Bigler, New York Tel. Co.
F. M. Cozzens, New York Tel. Co.
J. E. Drum, New York Tel. Co.
J. C. Fagan, New York Tel. Co.
V. R. Folmsbee, Glen Tel. Co.
F. C. Hagey, New York Tel. Co.
J. W. Kennedy, A. T. & T. Co.
S. B. Mooers, New York Tel. Co.

After the meeting a "get together" dinner took place. There was no speech-making. The evening passed quickly and enjoyably with music by a quartet, songs by the "crowd" and varied forms of entertainment by a number of members of the Section.

A pseudo "transcontinental talk," with a burlesque "roll call of the wire chiefs," was one of the many humorous features of the evening's entertainment. Twenty new members were elected into the section.

There were 200 present.

Western Section

Rochester

THE Rochester Chapter of the Western Section of the Telephone Society held its thirty-first meeting on May 23, 1916. The following officers were elected for the ensuing year: J. J. A. Menneiley, chairman; Frank E. Lawn, secretary-treasurer; Ben F. Gibson, member of executive committee.

Mr. D. C. Cox, division general manager of the Central Division, was then introduced as the speaker of the evening, and he announced as his subject, "The Use of the Margin." Mr. Cox is always interesting, and the effect of his paper upon his audience may be inferred by the following extract from the secretary's minutes:

"The title of Mr. Cox's talk did not prepare his listeners for the agreeable surprise they received; ancient Egyptian civilization and the difficulties under which it was attained, as narrated by the speaker, held his audience in almost breathless attention."

Mechanical precision does not secure such good results as brains, as witness the story from *Tit-Bits* of the late Professor Lounsbury of Yale, a great authority on the use of English.

Professor Lounsbury was the foe of the purist and pedant. On his summer holiday he was gazing out across the lake one gray and sultry afternoon and remarked:

"It looks like rain."

A pedant was seated in a rocking-chair near by.

"What looks like rain, Professor?" he chuckled. "Ha, ha! I've got you there. What looks like rain?"

"Water," Lounsbury answered coldly.

"Use a filter on your letters so they will be clear."—*Southwestern Telephone News.*

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As the Plan Works

By J. S. Kennedy, Secretary Benefit Fund Committee

THE address delivered by Mr. J. S. Kennedy before the Buffalo and Rochester sections of The Telephone Society contained so much that is of vital interest to all employees about the Employees' Benefit Fund, and the Committee which administers it, that parts of the address are reproduced this month so that all may learn these interesting facts about the working out of the Plan, and that the information may be readily accessible for reference from time to time.

It is a mighty good thing to work for a square deal boss; and I know as I go among our employees that we all believe the boss whose coat-of-arms is the Blue Bell has a top rank in the square deal class. In these days of contention between employer and employees, it sends a thrill through the heartstrings to find all along the lines, peace, contentment, industry, and the highest standard of loyalty in our ranks. We are all partners in the greatest public service corporation the world has produced.

In line with the square deal policy of our superiors, the Plan for Employees' Pensions, Disability Benefits, and Death Benefits was established on January 1, 1913. . . .

Among the great steam railroads most of the larger systems in the United States and Canada have pension plans financed by the companies, and some of the big street railway companies have adopted pension systems similar to the steam railroads.

Many industrial concerns have established contributory pensions.

In England, the railroad pension systems, some of which have been in existence for a half century, are all contributory.

The Carnegie Foundation, which has conducted an exhaustive investigation into the matter of pensions of every kind all over the civilized globe, says that "the Bell plan is the largest and most comprehensive system in the industrial world," and a commission which has been studying the question of pensioning Episcopal clergyman says, "it is the most comprehensive and elaborately organized pension undertaking in the world." A writer in *Collier's* just recently said of our company: "It has set up a decent living wage for work performed under sanitary and comfortable conditions, and has provided for sickness, disability, injury, old age, and death in a broader spirit than has yet been done, so far as I know, by any other corporation or government."

Situation of Government Employees

Advocates of the government ownership of telephone and telegraph companies are strangely silent on the point of how such a proposition would affect the working army of men and women in this field of endeavor. Many of us know men who have given fifty or more years in the government service and passed out in actual want for the barest necessities of life, and there is not even a promise of anything in the future.

. . . The president of one of the big Eastern trunk lines, who is now studying a plan for sickness benefits for his employees, told me only a few weeks ago that our plan was conceded to be without a peer, and the marvel of it was that we were able to carry it out without complete physical examination of all employees before hiring.

Compensation Laws

In nearly all of the States of the Union, Workmen's Compensation laws in one form or another have been enacted. While to many classes of workers these laws have been a great boon, it is a fact that the Bell Plan is more liberal than payments under any law yet enacted.

In New York State, where it is conceded that the most drastic compensation law yet enacted is in force, our Plan is very much more liberal. We of course provide for our employees in times of illness, and for their dependents after death from natural causes, as well as for accidents and deaths by accident. The compensation law allows no payments for injuries from accidents which do not cover more than two weeks, and if disability runs over two weeks, no allowance is made for the first two weeks. After the first two weeks, 66⅔ per cent. of the employee's average salary is allowed by the Workmen's Compensation law. Under our Plan, employees are paid their entire salary or wage during the first thirteen weeks of disability, which, of course, includes the first two weeks for which nothing is allowed under the Compensation Act.

Our experience during the time the Plan has been in existence has been that 98 per cent. of all accident cases have resulted in disability for a period of thirteen weeks or less; thus, it appears that our employees are about 33⅓ per cent. better off under our Plan than under the Compensation law.

In the three years from 1913 to 1915 inclusive, the expenditures from the Benefit Funds of the Bell Companies have aggregated $3,779,896. At the end of the year 1915, 257 former employees were on the pension roll, 54 having been added and 10 discontinued during the year. The average pension paid is $11 per month.

The Committee

. . . The Committee, which, under the provisions of the Plan, is appointed by the Board of Directors and is charged with its administration, consists of your Vice-President, Frank H. Bethell, who is its Chairman; Vice-Presidents Thurber and Huntington, General Counsel Swayze, and General Auditor Wiley.

Right here it is fitting without flattery or other than due credit, to congratulate you upon the Committee in charge of this work. During the more than two years that I have been its secretary, it has been delightful to witness week after week the intense interest, the kindly sympathy, the inclination of these men of big affairs always to give the benefit of the doubt in favor of the afflicted employee or his family. Every Tuesday, these men set aside from one to three hours from their busy activities to examine the cases presented to them and to discuss the best thing to be done in each case, so that full and even overflowing justice may be done to the employee. Every man or woman, no matter how humble his position, stands equal with the big boss before this tribunal; and were I privileged and time permitted, I would amaze you with a recital of the cases considered and the action taken. But when you consider that these men, now arisen to high position, were once men in the ranks climbing up the ladder by laborious steps from the bottom rung, could you expect other than a thorough appreciation of the conditions surrounding every class of employee and what every man or woman down the line is contending with? Let me say with the fullest assurance that any employee can come to this Committee with any appeal in connection with this Plan, if he feels aggrieved, and his case will receive complete review and consideration.

There are now 50 pensioners in the Company, 38 men and 12 women, 6 having been added during 1915, the payments amounting to $22,368. In the Eastern Group we have 82 pensioners receiving $37,248 annually. Provision is made in our pension plan so that the Committee in its descretion may continue pensions to dependent relatives for twelve months following the death of a pensioner, and this has been done in many cases.

Methods

The Plan makes provision for taking the average annual pay for ten years in determining the amount representative of the pay of the employee which shall be used in computing the pension. Such ten-year period shall be either the last ten-year period, or, in the discretion of the Committee, it may be the ten consecutive years during which the employee received the highest wages. This arrangement is valuable in the case of an employee who, on account of his age, may have been retained in active employment at a wage lower than he formerly received. In such a case as this, it is possible for the Committee to pension the employee, not on a basis of the lower wage received during the latter part of his business life, but upon a basis representing the best period of his active business life, and this is the plan pursued by our Committee.

The Plan as amended in 1914 made a further concession to employees totally disabled by accidents in service, extending the period for which benefits should be paid from six years to an unlimited period, practically making payments for life.

Considerable misapprehension exists in the ranks in connection with the payment of death benefits. The Plan does not provide an insurance, which at death may be payable to a relative or friend without qualification. The intent of the Plan is to provide at death help for a widow, if one survives, and to children, mother, father, or other relatives who have been dependent upon the deceased employee. Payment is always made to a widow, without regard to her means or financial condition.

To protect the employee so far as possible against loss, provision is made in the Plan for leave of absence, by which an employee, though ineligible to sick and accident benefits during such period of absence, may yet hold his previous record of service so as to count upon his return.

Many other corporations paying benefits require constant medical supervision of employees on the disability roll, but our people have placed the employees on an honor basis, and feel that this confidence is being respected.

. . . The present total cost for all of the various kinds of relief work, including benefits paid on account of sickness, accident or death and for pensions, is about ½ of 1 per cent. of the gross telephone revenue; or when considered in connection with the total telephone expense about ¾ of 1 per cent; or when considered in connection with the payroll, less than 1½ per cent. This extremely low cost speaks volumes for the character and loyalty of our employees. The result attained has been by and with their active coöperation.

I believe all of us will agree that after nearly three years of experience with the Plan, it has fulfilled the expectation of its founders as expressed by Mr. Vail, when he said, in announcing its institution:

"The underlying motive in the Plan was to secure the younger employees, who were intending to make their life work in the service of the Bell System, against the ordinary contingencies during the period when it is impossible to provide against them by the exercise of the usual thrift and economy; and to give such employees freedom from anxiety, either for their own welfare or that of those dependent upon them."

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The Power That Wins

A GOOD many years ago, before the telephone world was as big as it is now, and before the traffic rules were as highly developed, there was a young girl who came to be an operator. There were many more, of course, but there was only one like her. She had sparkling eyes and a firm resolution in the vicinity of mouth and chin, and she came into the service with the purpose of making this profession her life work.

It chanced that while she was still new in the work, there was a certain subscriber at her position who was not as convinced as he subsequently became of the excellence of the telephone and telephone service. Profanity was his mascot—he never parted from it. With it he garnished his flowing conversation, and every sentiment he uttered was spiced and seasoned and flavored with it until you would believe not a bit of heat or bite or ginger remained for any other tongue.

As we have said, this was in the formative days, before the present stringent practice of dealing with too-sizzling words over the wire had been worked out. But the operator never flinched. She had a mind and will and personality and thoughts of her own. No uncontrolled outburst could affect her. She narrowed her sparkling eyes and the resolution about mouth and chin took on more firm and decided lines. She said to herself, "You are not going to speak that way to me," and she set about the task of showing him that he wasn't. Every time he had any trouble—and whether he did or not—she was firmly pleasant and capable; she straightened out every difficulty for him with unwavering good temper and firmness, but she never gave an inch in her voiceless resistance to every uncensored expression he uttered. Capable operating and pure force of character, determination not to permit such a highly spiced vocabulary to enter her consciousness at all, were her weapons. And she used them well.

The inevitable happened. The shell of his bluster was utterly shattered against the bulwark of her high determination and pure mastery of the situation. Before the operator had served this subscriber more than a few weeks he was as temperate as a gentleman.

But he was still the terror of the other operators. Without the restraining influence of the determined one he would lapse into what was evidently his perpetual habit away from the telephone as well as at it. The other operators would sometimes be unable to handle him at all and would turn in despair to the only one who could, and beg her to take him up. When the cool, firm cheerfulness of his regular operator touched his hot temper, he would change in an instant and say "Well, is that you, Miss," as if *now* his troubles were over. As indeed they usually were, for with a "Can I straighten anything out for you, Mr. Blank?" she would have him in an actually genial state of mind before a moment had elapsed.

As she handled the first difficult subscriber she encountered, with the result that he became an ardent friend and supporter of the fast-developing telephone, so she mastered the other hard things that came along. The same sincere determination won other victories as it had won the first, and to-day she is the chief operator of one of our largest central offices. The sparkling eyes are alight with lively humor, and ready sympathy and understanding, and the mouth and chin have added to the quiet resolution and dignity that conquered the irate subscriber, a sweetness and strength that you feel at once has come from setting things right for many, many other people since the days of the conquered subscriber.

"Just think of what our telephone has done for love-making!" exclaimed Mr. Charles Herford. "I know a young man in this city who called up his lady-love in Denver, and she sobbed so at this proof of his devotion that it cost him about $19 to get five words through to her. And yet the American man's use of the telephone is merely one of his original contributions to the technique of love-making, merely one proof that in this direction, as in others, we are the most inventive nation in the world."—*Evening World, N. Y.*

Emergency Call

AN excited subscriber in Flushing took down her receiver about 7.15 one evening in a flutter of extreme concern over some pressing emergency. The operator understood her to say her little girl was taken suddenly ill.

Without losing an instant the operator gave the call to her supervisor so that a doctor might be summoned and reach the child as soon as human effort could bring him. But what was the astonishment of the supervisor on taking up the call to hear the subscriber effervesce over the wire, "I wanted to tell the girls, I've just returned from New York after spending the day at the Hotel McAlpin, and Central, my Pekinese dog, won a blue ribbon—first prize. I am so proud that I simply had to tell the girls about it."

E. BRESLIN,
Evening Chief Operator, Flushing.

Remember

The Best Safety Device Known Is a Careful Man

W. O. SCHNITZER, night wire chief, Buffalo, sends the following article, which he saw posted in a large factory:

Safety should be your first thought. Accidents to yourself or another are usually somebody's fault. Don't let them be your fault. Finding the danger points about your job first is the safest way, then report them to your foreman. Every time you prevent an accident to yourself or to another, you become someone's benefactor. Time lost through accident is a waste, if the accident could have been prevented. Your duty to yourself, to your home and society is to help prevent that waste by being careful.

For most of us it isn't danger points about the job, but "safety first" in general that we have to keep alive in our minds, treating moving trains, electric fans, and elevators with respect, and not mistaking a minute saved in a hurry as more precious than an hour lost in repentance.

Switchboard Smiles

QUEER quirks of human nature and flustered femininity among subscribers are in constant procession before the busy operators.

A subscriber in Prospect asked his operator to ring his bell in three minutes and immediately hung up his receiver. At the appointed time the supervisor rang on the line and the subscriber responded simply with "Thank you." Later he called again to thank the operator, and explained that he had been boiling eggs and wanted to time them. They had been cooked to the queen's taste.

Miss H. E. Cowan, supervisor at Market, writes of a call from a coin box. The calling party asked for an out of town number and was requested by the operator to deposit ten cents for five minutes. The lady replied in great excitement, "Oh, Central, I put the money in the wrong slot. I had my gloves on and couldn't see."

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The Edison Company Believes in Telephone Courtesy

New York Edison Company's Methods of Courtesy and Efficiency

THE crisp, but not always courteous or dignified telephonic salutation, "Hello" (an Americanism about which no end of fun has been created by our English cousins, who prefer "Are you there?") is fast disappearing as a result of the general trend toward efficient telephoning. Corporations to-day with thousands of dollars worth of business to be transacted through the medium of the telephone are fostering this general movement toward telephone reform, and the work being done in that field by the New York Edison Company is a conspicuous example. Here the "Hello" has gone forever. In its place has been adopted the newer form of response in which the person answering the telephone call states first the name of the bureau or office in which he or she receives the call, following which the name of the individual is announced. Under this arrangement the person calling is enabled to begin conversation at once, or is advised immediately if he has called the wrong person, department or bureau. To insure telephone efficiency the New York Edison Company has undertaken a certain amount of educational work, which is being done in the form of a series of lectures. In these instructions to the employees the necessity of courtesy and accuracy in answering questions or referring calls to the proper individuals is emphasized. The matter of voice is also touched upon, and a pleasant, easy conversational tone with a rising inflection, although not of too much volume, is urged.

Private Telephone Exchange Through Which the Telephone Business of The New York Edison Company's Irving Place Office Is Conducted. This Bank of Boards Handles 12,000 Telephone Calls Each Day

A book of instructions for all employees has been issued, entitled, "Edison Service and the Telephone," embodying fifteen rules to promote good service, which are described in this article.

It is no more difficult to transact business by means of the telephone than by a direct interview, and no more difficult to show real courtesy. Nevertheless, during telephone conversations some people are far more apt to become impatient. Such being the case the Edison Company employees are urged to be courteous under every condition and to keep their temper well in hand no matter how testy the person with whom they are speaking may become. The company will not countenance sharp tones, abrupt manners, and other faults that are often developed in telephone conversations.

The fundamental principles of using a telephone instrument are also emphasized. Because the operator has no time to look up the telephone addresses of subscribers the employee is asked to give the number and not the name of the person or firm desired to the girl at the switchboard. After the number is given the one calling must remain at the telephone ready to speak the moment the connection is secured. In transferring calls from one extension to another the employee is told to move the receiver hook up and down slowly, not rapidly. The employee must not use another telephone to ask for the transfer of a call from one extension to another. For mechanical reasons at the switchboard this would cause the operator a great deal of trouble, and trouble naturally detracts from the general efficiency of the company's telephone system. The employee, if possible, should secure the name and address of the individual to whom he or she is speaking.

When calls are answered at the telephone on another employee's desk the one who responds must announce the name of the individual to whom the telephone belongs. If possible the name and telephone number of the person calling should be secured so that the owner of the telephone can get in communication with the caller as soon as possible. If the individual asked for is talking on another telephone the proper statement is, "Engaged on another wire." The employee must not refer to the person calling as a "party." This is assumed to be an objectionable phrase.

All telephone communications should be terminated with some expression that will indicate that the conversation is at an end.

The equipment of the Edison Company in its main and branch offices in New York consists of sixteen private branch exchanges, 165 trunk lines, 750 extension stations, 29 direct lines, and 66 tie lines. Over 30,000 calls a day are handled, or over 10,000,000 a year.

Waiting For a Call

TRULY a salesman has some queer experiences in his travels of the day, and one that rather impressed me happened not long ago.

One of our subscribers, during a conversation, stated that he was having trouble with the service and it was not all he desired. Upon being questioned he said: "Central all time says ven I am called, 'De line's busy.' Bye-m-bye, same ting again, 'De line's busy.' Now how can dat be ven right here my vife was settin' on de vire all de time vaiting for a call and yet dose girls say 'De line's busy'?"

L. J. NIESS, *Salesman,*
Port Chester Commercial.

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Indicating Machine Switches and Associated Apparatus

By F. B. Rodgers, Wire Chief, Williamsburg

FOR the benefit of those other than members of the Wire Chiefs' Force, responsible and on duty after hours, the following scheme has been tried and proved its worth at the Stagg central office in Brooklyn. The object is to overcome the possibility of a machine's stopping, or the development of some trouble that will necessitate the starting and transferring of the central office load to another machine by someone not familiar with things electrical.

Assuming, as in the case of Stagg central office, that there are three ringing and three message register machines: At the power board, under all apparatus associated with the ringing machines we painted a letter "R" in three colors—red under the apparatus associated with ringing machine No. 1, white under the apparatus associated with ringing machine No. 2, and yellow under the apparatus associated with ringing machine No. 3, following the same procedure under apparatus associated with message register machines, only substituting the letter "M" for the letter "R."

In order to insure the sequence of the steps necessary in starting and transferring the load, we used figures corresponding in colors to the letters. For example:

Red "R" and red figure 1 indicate the first step: Close in motor switch. Red "R" and red figure 2 indicate the second step: Turn starting-box wheel to point marked "On." Red "R" and red figure 3 indicate the third step: Turn voltage switch to corresponding color. Red "R" and red figure 4 indicate the fourth step: Turn wheel of rheostat and build up voltage, which is indicated on the face plate of rheostat and on the face plate of the corresponding voltmeter which is common to all ringing machines, associated by figures consisting of the color combinations, red, white and yellow. Red "R" and red figure 5 indicate the fifth step: Throw in the switches controlling the central office load to the corresponding color.

This scheme is applicable to any type of machine, irrespective of the number of moves necessary, just so long as the general idea is followed, *i.e.*, use the letter "C" for apparatus associated with the charging machine and enough figures in corresponding color to cover the necessary moves.

What appears to be a strong point in its favor is that it can be made standard and the subject of a letter to all forces involved, outlining the general plan. After this has been done a manager, a chief operator or janitor could go to any office and start any machine or transfer the load, without ever having seen the machine in question before.

Managers, watchmen, or any others who travel from office to office would find this of special benefit, as there are many intricacies that are peculiar to this or that office and are, in the aggregate, hard to memorize.

In the Long Island Division, at the Supervising Wire Chief's office, where a competent man is on duty at all hours, a binder with blue prints of each power board in the division is maintained. On these prints letters and figures corresponding in color and location to the original on the power board could be inserted. If a photograph is preferable to the blue prints, the insertion of letters and figures should apply as well.

One more point that seems necessary in order to associate the proper machine with the switches, etc., to be manipulated, is that each machine be indicated in a corresponding letter and color.

In conclusion I might mention that the advisability of standardizing this scheme in the Long Island Division is now being considered.

Lost, a Correspondent

THE following letter was received by Mr. W. C. Sexsmith, district manager of this Company, at Binghamton, N. Y.:

WEST CONCORD, MINN., July 25, 1915.

New York Telephone Company, Manager, Binghamton, N. Y.

DEAR SIR: I will sent this letter to you, Sir, about Pair of Stevens Climbers and I him out here this State and I lilke get Pair of Stevens Climbers and find out about that Stevens Price list for No. 15½ ins. Climbers by mail, Sir, and lilke me know very soon you can do and sent me that Price list to me and I will sent the money Order from Post Office Money Order to that for Pair of Stevens Climbers and please write soon you can for me and I him a lineman working for ——— Telephone Exchange Co. in her some time and Please sent me that Price list to me soon you get my letter, Sir, and I thought my right to write this letter to you, Mr. Manager and I wrote to town of Lockport, N.Y., about Pair of Stevens Climbers to Manager at Lockport, N.Y., and I did live there for a long time, Sir. is name was Mr. C. T. White. let me know you can sent me that for Pair of and I did work for N. Y. Tele. Co. in Lockport about and think you can find out I can get Pair of Stevens Climbers and sent me that Price list and sent me that Parcel Post Rates to me, sir, and I will sent the money to that company sir, and I want a ling pair of Stevens Climbers 15.½ in length Stevens Climbers.

Yours very truly,
(Signature)

Mr. Sexsmith immediately replied, but his letter was returned undelivered.

If this should fall under the eye of Mr. Sexsmith's correspondent, the information desired can be obtained by sending present address.

The Police and the Telephone

A FEW weeks ago the Advertising Department sent the Nyack Commercial Manager a copy of a police department advertisement which appeared in the Englewood papers. Mr. Rossborough made copies of it and sent them to the chiefs of police and the newspapers throughout his district. A number of complimentary newspaper comments were received, and the following letter from the chief of police of Suffern is also the result of this work:

A. S. ROSSBOROUGH,
Local Commercial Manager, Nyack.

February 21, 1916.

Mr. A. S. Rossborough, Local Commercial Manager, Nyack, N. Y.

DEAR SIR: I am very glad that you sent me a copy of a letter you claim came from a neighboring city, in regard to the telephone. which can be used to prevent crime.

Well, Sir! I wish I had the power to enforce all the people in the State to put 'phones in their houses. It would prevent a good deal of crime. I don't know what the people would do in Suffern, N. Y., if there were no telephones in their houses and were it not for the good service they receive from the telephone exchange.

I know that I cleared a great theft in Suffern, N. Y., and I didn't have to go out of my office to do it. All I had to do was to ring up on the 'phone and notify the police of Ridgewood, N. J., that there were three persons on the train who had just gotten away from the police here. I wanted to have them caught, so I got busy on the 'phone and the 'phone did the work. They were caught without any trouble. I would advise all the people who haven't 'phones in their houses t› get busy and get them. I remain.

Very truly,
(Signed) A. R. SCHULTZ, *Chief of Police.*

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Transcontinental Demonstrations

Riverside Chamber of Commerce

AT a banquet of the Chamber of Commerce of Riverside, Cal., over 500 persons listened to the demonstration of the Transcontinental wire from New York, in which twenty persons, several of them Riverside people visiting in the East, took part on May 22.

The roll-call of wire chiefs across the continent was called from Riverside, and then the following persons conversed:

Mr. Hamilton Holt, editor of the *Independent*, with Mr. David Starr Jordan, Chancellor of Leland Stanford, Jr., University; Mr. William A. Ferguson, secretary to Borough President Marks, with Mr. Oscar Ford, Mayor of Riverside; Mr. Wm. Woodhead, with Mr. Frank A. Miller; Mr. H. S. Buttenheim, with Mr. Roy S. Smith, vice-president American City Bureau, Riverside; Mr. Robert S. Binkard, secretary City Club, New York, with Mr. Frank A. Miller, master of Mission Inn, Riverside; Mr. C. C. Arnold, former president Riverside Chamber of Commerce, and Mr. Douchy, incoming president Riverside Chamber of Commerce; Mrs. E. G. Pratt, with Mr. Smith; Mrs. McCallum, with her mother, Mrs. Norton; Mrs. C. C. Arnold, with Dr. Louise Clarke.

Mrs. E. G. Pratt sang "The End of a Perfect Day," which was particularly appropriate, as it was composed at the Mission Inn in Riverside.

Amsterdam Elks' Club and Chamber of Commerce

ONE of the largest dinners ever held in Amsterdam, N. Y., was that of the Elks and the Chamber of Commerce, at which 250 persons assembled to hear the demonstration of the Transcontinental telephone, on May 22.

Mr. Carroll delivered the address and Mr. Arthur J. Campbell, local commercial manager, acted as master of ceremonies. Mr. Cline, Mayor of Amsterdam, talked with the Mayor of San Francisco; Mr. George Scott and Mr. A. T. Barder, exalted rulers, B. P. O. E., of Amsterdam and San Francisco, respectively, exchanged greetings, as did Mr. Wm. H. Ross and Mr. M. L. Walter; Mr. DeBaun Van Aken, president of the Board of Trade; Mr. Jacob Kyzor, president Chamber of Commerce, Amsterdam; and Mr. King, secretary of the San Francisco Chamber of Commerce. Mr. John P. Turner, in Amsterdam, talked with Mr. John C. Van Buren; and Mr. D. D. Hubbs, with his sister, Mrs. Benucci. "Hello, 'Frisco!" was sung from Amsterdam by Mr. William D. Heath, and Mrs. Gravely Le Page responded from San Francisco with "Hello, New York!" The sound of the Pacific Ocean breaking on Seal Rocks and a victrola selection of "The Star-Spangled Banner" were also transmitted, closing a program of absorbing interest to the business men of Amsterdam, who were most enthusiastic in expressing their appreciation.

New York Alumni of Hartwick Seminary

TWO hundred and fifty-five persons assembled at St. Matthew's Evangelical Lutheran Church in Brooklyn on May 23 for the banquet and Transcontinental demonstration held under the auspices of the New York branch of the Alumni Association of Hartwick Seminary.

Mr. Schmidt and Mr. Leimbach conducted the telephone program. Conversations were carried on over the Line by many of the guests, and the usual songs and victrola selections were transmitted. Among those who spoke to San Francisco were: Rev. A. S. Hardy; Rev. W. H. Stutts; Miss Cora Young; Prof. B. F. Bauer; Rev. C. Zinnsmeister; Rev. A. N. Bean; Mrs. E. J. Horlocker, and Master William Jordan. The audience was most cordial with its applause at the close of the demonstration, and Mr. Hardy offered a motion for a rising vote of thanks, which was passed enthusiastically.

Dr. H. G. Buehler, headmaster of the Hotchkiss School, one of the formal speakers of the evening, paid a glowing tribute to the American Telephone and Telegraph Company and the associated companies, commending their far-sighted and public-spirited policies.

Case School of Applied Science

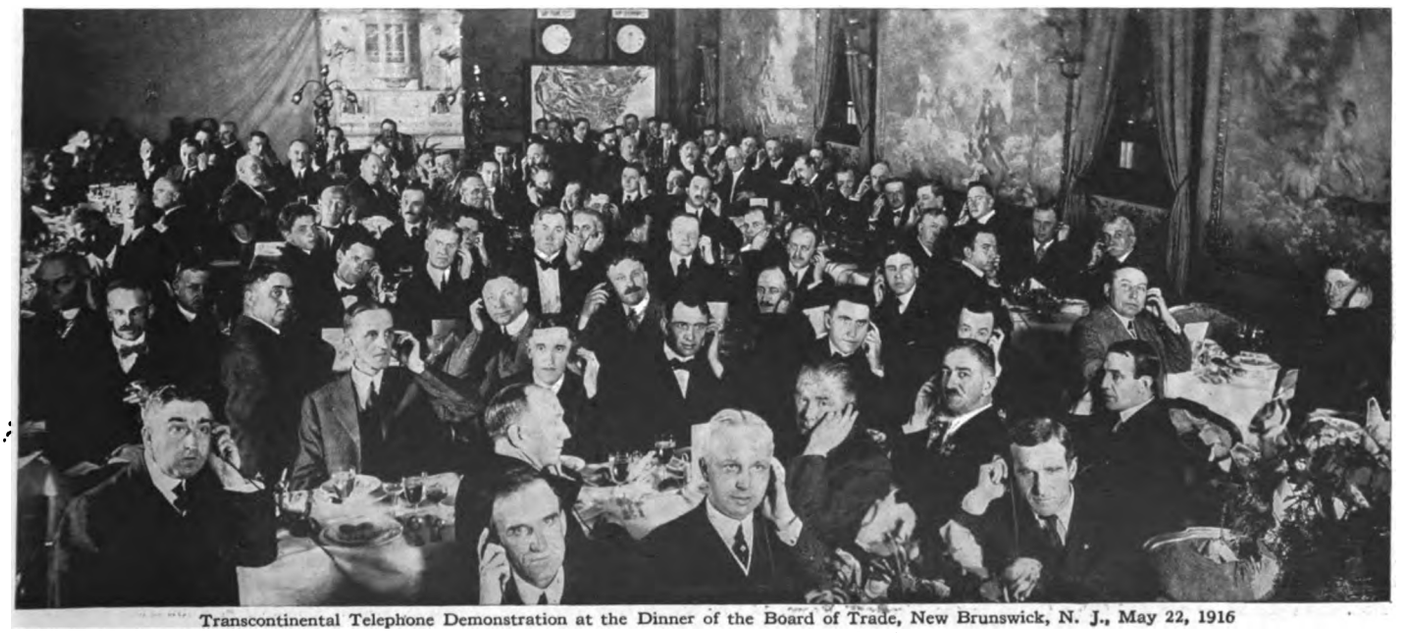
A TRIANGULAR demonstration was held on May 24 by alumni of the Case School of Applied Science of Cleveland, O. Fifty members and guests of the Association were assembled in New York, at the Hotel Marlborough, 400 in Cleveland, and three in San Francisco.

Dinner was served at 7.50 P.M., in New York, and was immediately followed by the lecture on "The Triumph of Science," given by Mr. H. J. Carroll, and the opening of the Line by Mr. Leimbach. Many of the alumni conversed together over the Line. President Chas. L. Howe, of the Case School, spoke from Cleveland, as did several of the professors. The college yell and verses of the college song varied the program very pleasantly, and called forth warmest appreciation. After the usual features of the sound of the Pacific and good-night roll-call of wire chiefs, the Line was closed and the pent-up applause of the enthusiastic audience was given full rein.

Kingston Chamber of Commerce

PRECEDING a smoker held by the Kingston Chamber of Commerce on May 25 at the Elks' Club House at Kingston, N. Y., a demonstration was given of the Transcontinental Telephone Line to the 250 business men who were present.

Mr. Clearwater, local commercial manager, presided over the Line, and the address was given by Mr. Carroll. The usual features of the demonstration, the roll-call of transcontinental wire chiefs and the transmission of victrola selections and roar of the Pacific, were enthusiastically received, and conversations were carried on by a number of the members and guests, among them Mr. R. E. Leighton, president of



Transcontinental Telephone Demonstration at the Dinner of the Board of Trade, New Brunswick, N. J., May 22, 1916

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the Kingston Chamber of Commerce, Admiral F. J. Higginson, retired, who spoke with Captain Bennett, commandant of Mare Island, at Vallejo, Cal., and others. The demonstration of the business and social possibilities of the cross-continent avenue of direct communication was extremely effective, and the expressions of thanks and appreciation were most cordial.

The New England Society of Brooklyn

THE Hotel Bossert, Brooklyn, was the scene of a very successful demonstration of the Transcontinental Line before 320 members of the New England Society of that city.

The lecture was given by Mr. Carroll, and Mr. S. V. Gibson, local commercial manager, presided over the Line. The audience was a representative one, and proved to be most enthusiastic and responsive. Among those who used the Line were: Mr. Henry Allen Price, who sang "Hello, 'Frisco"; Hon. David A. Body, president of the Society; Hon. Lewis H. Pounds, president of the Borough of Brooklyn; Hon. William M. Calder, ex-member of Congress; Rev. Newell Dwight Hillis, of Plymouth Church; Hon. Elijah R. Kennedy and Mr. H. A. Moody.

A standing vote of thanks to the telephone companies and the men who presided at the demonstration were given with enthusiasm, and many individual expressions of thanks and appreciation were received.

New Brunswick Board of Trade

THE Board of Trade of New Brunswick, N. J., enjoyed a Transcontinental telephone program on May 29, when Mr. Schmidt and Mr. Terrill, local commercial manager, explained the interesting facts about the line and opened it for the use of the 135 of New Brunswick's leading business men who were present.

Those who talked over the Line were Mr. Robert Carson, president of the Board of Trade; Mr. George A. Viehman, president of the New Jersey State Chamber of Commerce; Hon. Edward F. Farrington, Mayor of New Brunswick; Dr. William H. S. Demarest, president of Rutgers College; Mr. J. W. Johnson, president of Johnson and Johnson; Prof. Jacob B. Lipman, director New Jersey State Agricultural Experiment Station, and Mr. Charles A. McCormick. Mr. Eric V. Goodwin sang "On the Banks of the Old Raritan," and the audience joined in the chorus. Music was also transmitted from San Francisco, and a song, "Good night, 'Frisco," written especially for the occasion, brought the program to a close.

Mr. Viehman moved a vote of thanks to the A. T. & T. Co., and the New York Telephone Company, and it was unanimously passed with enthusiasm.

Glens Falls Chamber of Commerce

A VERY successful demonstration was held at Glens Falls on May 31, before about 250 members and guests of the Chamber of Commerce. Mr. Leimbach spoke on the Triumph of Science, and the local commercial manager, Mr. H. A. Beaton, presided over the Line.

Those who spoke to San Francisco included Mr. Elmer J. West, president Glens Falls Chamber of Commerce; Mr. B. F. McCreery; Mr. I. Griffin, ex-Mayor of Glens Falls; Mr. G. H. Greenslet; Mrs. Fred M. Weeks; Mrs. E. J. West; Mr. G. Tate; Mr. E. L. H. Meyer; Mr. W. D. Hodson; and Mr. Chester B. Granby, editor Glens Falls *Times*.

A large number of people individually expressed their thanks and their interest in the affair to Mr. Beaton and Mr. Leimbach after the adjournment of the meeting.

Seattle Chamber of Commerce

CHAUNCEY M. DEPEW, in New York, was the speaker at the dinner of the Chamber of Commerce of Seattle, Wash., on May 31. Three hundred members and guests were assembled in Seattle, and fifteen guests were gathered at No. 15 Dey street, the New York end of the line, and others at Washington, D. C.

The Line passed through Pittsburgh, Chicago, Omaha, Denver, Salt Lake City, Pocatello, Boise, Walla Walla, Portland, and Seattle. The roll call of wire chiefs in these cities was called from New York, and the first conversation was between Mr. Depew and Mr. Thomas Burke, president of the Seattle Chamber of Commerce. Mr. Depew then delivered an address to the Seattle audience.

"We, to-night, by this marvelous invention for peace," said Mr. Depew, "are brothers in mingled voices across 3,000 miles of country inhabited by a people with one mind, one love, one aspiration, and that is for the United States. You are of yesterday, we are of three centuries ago, but our traditions, our inheritance and patriotism are the same.

"Baron d'Estournelles de Constant, the eminent French statesman, said to me in Paris, that he had visited every great city in the world, but that, from what its citizens told him, Seattle was far the largest—its boundaries ran to the Rockies. Now by the telephone it makes New York a suburb."

Mr. Depew spoke impressively of American ideals, and the necessity for preparedness.

A solo by Mr. Theo. Karle followed Mr. Depew's address, and then conversations were held. The following were among the speakers at New York: Col. J. A. Sleicher, proprietor of *Leslie's Weekly;* Mr. Earl J. Hadley, of the New York *Evening Sun;* Mr. Hickman Price, the New York *Sun*.

Mr. Wm. H. Parry, formerly of Seattle, now a member of the Federal Trade Commission, spoke from Washington, D. C., to his father-in-law, Mr. Byron Phelps, auditor Kings County, Washington, in Seattle.

Saratoga Springs Business Men's Association

TRANSCONTINENTAL telephone communication was set up for the interest and enjoyment of 325 business men and their guests of Saratoga Springs at the United States Hotel on June 2.

Mr. J. N. Crocker, local commercial manager, acted as master of ceremonies, and Mr. Carroll gave the address on "The Triumph of Science." Mr. Chauncey Olcott sang "My Wild Irish Rose," from Saratoga, and victrola selections and the sound of the Pacific waves were transmitted from San Francisco. Conversations with prominent men in San Francisco were carried on by the following guests in Saratoga: Hon. W. H. Waterbury, commissioner of accounts; Hon. Edgar T. Brackett, ex-State Senator; Hon. C. C. Lester, ex-city magistrate; Mr. W. H. Moody, city editor *The Saratogian;* Mr. Thomas R. Kneil, president the Business Men's Association; Mr. William Gage; Mr. Chauncey Olcott; Mr. Ransom Qua, and Mr. D. E. Harrington.

At Mr. Kneil's suggestion a rising vote of thanks was given to the telephone companies, and the applause which accompanied it was vigorous.

Ogdensburg Chamber of Commerce

OGDENSBURG, N. Y., was connected with San Francisco over the Transcontinental Voice Highway, on June 7, when nearly two hundred members of the Chamber of Commerce and their

Hon. Chauncey M. Depew and Other Guests in the Directors' Room, 15 Dey Street, New York End of Seattle, Wash., Chamber of Commerce Transcontinental Telephone Demonstration, May 31, 1916

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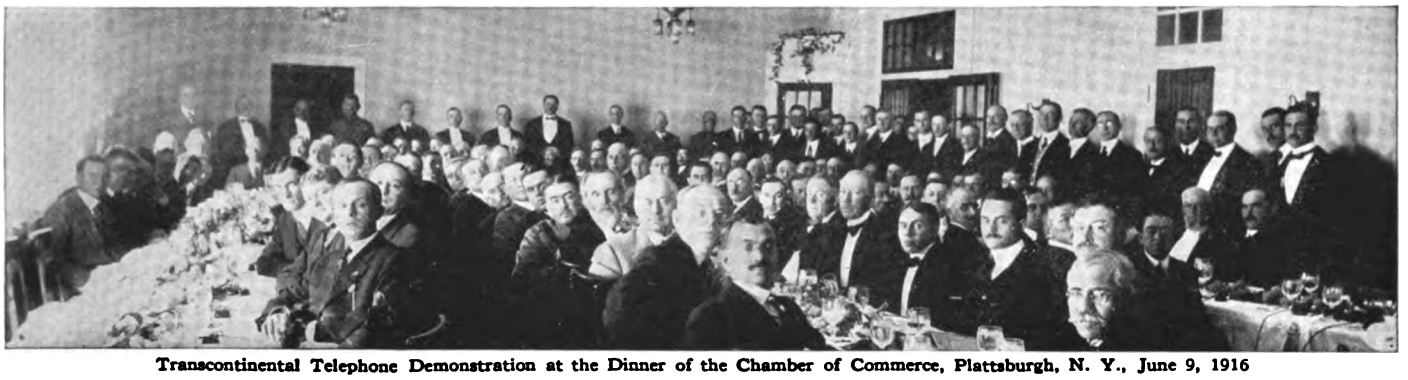

Transcontinental Telephone Demonstration at the Dinner of the Chamber of Commerce, Plattsburgh, N. Y., June 9, 1916

friends assembled for a telephone banquet.

Mr. Leimbach's illustrated talk on the development of the Transcontinental Line was received with much enthusiasm, and when Mr. Henry McConville, local manager of the Mountain Home Telephone Company, opened the line and called the roll call of wire chiefs, the audience was greatly impressed.

Greetings were exchanged between Hon. Julius Frank, Mayor of Ogdensburg, and Hon. James Rolph, Jr., Mayor of San Francisco; and Mr. Andrew Irving, chairman of the Board of Public Works, Mr. Felix Hulser, president of the Chamber of Commerce, and Rt. Rev. Bishop J. H. Conroy, spoke with various San Franciscans.

High tribute was paid to the A. T. & T. Co. and the Mountain Home Telephone Company in several of the speeches made during the evening, and at the close of the telephone program, a vote of thanks was given by the entire audience.

Plattsburgh

THE high state of telephone preparedness was demonstrated in the very home ground of the preparedness idea on June 9, when a Transcontinental telephone program was given at Plattsburgh, N. Y., in connection with the annual dinner of the Chamber of Commerce. The guests numbered about two hundred, among them several United States Army officers from Plattsburgh Barracks and the training camp.

Mr. Leimbach spoke on the Triumph of Science, and Mr. Leonard, local manager of the Mountain Home Telephone Company, opened the line. Mr. W. B. Jacques, president of the Chamber of Commerce, spoke with the president of the San Francisco Chamber and was followed by Hon. Francis M. Hugo, Secretary of State, New York, who talked with Mr. Bates. Other speakers over the long line were Hon. Patrick J. Tierney, Comptroller; Capt. H. H. Scott, U. S. A.; Hon. N. N. Marshall, State Senator; Major F. H. Lawton, U. S. A., quartermaster of the Plattsburgh Training Camp; Major P. Murray; Mr. F. S. Smith.

After the demonstration a number of the officers of the Army complimented the Bell System and stated that it was an excellent example of preparedness in every sense of the word.

Hon. Francis M. Hugo made the speech of the evening, on "Preparedness," and in the course of his remarks he stated that he was glad to pay his respects to the telephone industry of this country and further complimented the A. T. & T. Co. on its high ideals and the wonderful progress it has made.

Mr. W. B. Eddy, the last speaker of the evening, told of how he held the first long distance telephone conversation with anyone in Plattsburgh. It took place thirty years ago between Mr. Eddy, then at Whitehall, and the late Warren Dow, then manager of the telegraph office at Plattsburgh. Even in that early day music was transmitted across the line, for a field musician from Plattsburgh Barracks blew bugle calls in the office and they were heard by Mr. Eddy at Whitehall.

Consideration and Appreciation

THE appreciative tone of the following letter shows the effect upon the writer of a "little act of kindness" performed by Mr. C. E. Lovell, an employee of the Plant Department at Binghamton. It is such consideration for the public as was shown by Mr. Lovell that wins such appreciation as is shown by Mr. Rand's letter.

32 DICKSON AVENUE, BINGHAMTON, N. Y.

Manager Bell Telephone Exchange, Binghamton, N. Y.

DEAR SIR: Having been a subscriber in this and other cities for Bell service for past ten or twelve years and during that time having found many real and imaginary excuses for finding fault with Bell service, I wish to call your attention to an act of courtesy performed by one of your employees, a Mr. Lovell of Judd street. Although I understand he is not connected with your trouble gang, he, because of illness in my family, most cheerfully put himself to no little inconvenience after seven o'clock to-night to hunt for and locate the trouble that put our line out of working order after to-day's storm.

This act of courtesy is deeply appreciated, as I think we, the general public, are so prone to find fault and show a lack of appreciation for the many favors done us by the public servants.

I therefore take the liberty of calling this matter to your attention, and wish to thank you and, through you, Mr. Lovell.

Most sincerely yours,

C. L. RAND.

Niagara Toll Wins Business

THE good work of the toll operators at Niagara Falls won an enthusiastic convert to the practice of securing advertising by telephone when the toll calls of the Niagara Falls *Journal* were put through so speedily and successfully that the paper secured fifty-four advertisements in two days. A letter from Mr. Van Alstin, manager of the *Journal*, shows the up-to-date ideas of this paper as to the right method of selling its advertising space, and the success with which it is meeting—as well as one vital factor of that success, the good service which the "toll girls" made available.

Mr. Van Alstin's letter follows:

Mr. F. M. Welles, Manager, Falls Branch, New York Telephone Company, Niagara Falls, N. Y.

DEAR SIR: I am sending under separate cover a copy of the edition of the *Journal* for June 3.

This is a special good roads, motoring, and touring edition of the *Journal*. It carries a good deal of advertising from various points in the State of New York as well as from Canada.

Out of the large number of special advertisements appearing in this edition, fifty-four were secured by telephone over the lines of your company. I think that this is rather a record for any paper in this section and is also a good record for your Company.

I want to personally thank the "toll girls" for the good work done and want to state that I appreciate the service given. As this soliciting was done in a couple of days, it meant that many calls were given at a time and the operators were courteous and did all that they could to secure the parties desired promptly.

To have secured this business in any other way would have required over two weeks' time of a solicitor and the expense of same would have been much more than what the toll charges will be.

Long Distance Diagnosis

WHAT may prove to be an epoch-making experiment was performed over the long distance telephone between San Francisco and Los Angeles when two physicians proved that diagnoses of various diseases could be made over the telephone.

A fine electric wire, connected to the telephone, was placed in a vial containing the disease culture, in a laboratory at San Francisco. Dr. James T. Fisher in Los Angeles held the receiver to his ear, and in three seconds pronounced it tuberculosis.

The wire was then removed to another culture and the correct diagnosis for this disease was given in four seconds. Out of eleven tests, nine correct results were given.

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The Conviction of Experience

By H. J. Carroll and G. A. Leimbach, Special Agents, Advertising Department

FEW positions in the Telephone Company are so interesting as that of the men who lecture at the Transcontinental demonstrations. To them is given the privilege of watching the play of many emotions—of seeing skepticism change to conviction. They are apostles conducting missions for unbelievers and the conversions which follow their talks and the demonstrations of Transcontinental telephony are sometimes startling and heart-gripping enough for another O. Henry. When Dom Pedro de Alcantara, Emperor of Brazil, heard Alexander Graham Bell's voice over the telephone at the Philadelphia Centennial in 1876, the South American dropped the telephone receiver and cried, "My God, it talks!" An emotion very similar has been felt and expressed by thousands at the Transcontinental demonstrations.

We have read and heard of the psychic phenomenon called "thought transference," by which persons gifted with mediumistic powers can communicate with distant persons endowed with the same mental qualities, but we have always felt rather skeptical, thinking, though the narrator may be perfectly sincere in his statement, that he is perhaps laboring under some hallucination.

The average man or woman has the same feeling when the subject of Transcontinental conversation is broached. It is too gigantic for the mind to grasp. People listen to the explanation of the "Triumph of Science" when the Transcontinental telephone line is about to be demonstrated, and often an incredulous smile can be detected flitting across their faces. They are requested to put the receivers to their ears and they hear the roll call of Transcontinental Wire Chiefs. Gradually their incredulity diminishes; they begin to wonder—can it be that the voices they are hearing really come from those far Western cities?

The conversations follow. Men and women with whom they associate, their neighbors and their friends talk to acquaintances and relatives in far off California.

Donald Willoughby in San Francisco sings over the 3,400 miles of wire to an audience gathered at a banquet in Staten Island. One woman in the audience starts from her chair. "That's *my* boy's voice!" she cries. Can you picture her emotion? Distance is wiped out, no continent intervenes—her boy is singing to her just as he used to do in the old home years ago, and she weeps, unmindful of the hundreds of eyes that are watching her. Most of those present know her and knew her son. They, too, recognize the voice that comes so clear from half a world away. They even remember the boyish pranks of the man whose voice is sounding across the stretch of miles. Men and women take tight hold upon their emotions as the mother whispers, "I wonder if I could speak with him?" Her request is complied with, and mother and son, after years of separation, are reunited by means of the telephone.

At Ridgewood, N. J., Mrs. Lilly is listening to the conversations between her neighbors and acquaintances and their friends in San Francisco. Her son goes to the telephone to talk with his sister, Mrs. Dunham, and over the broad expanse of the American continent Mrs. Lilly hears a voice that carries her back over many years. In imagination she again sees her daughter and son as little children. Can it be possible that though so widely separated she hears them talking to each other? She must talk to her daughter, and her son prepares the way by telling his sister that their mother is going to speak with her.

The mother reaches the telephone, takes up the receiver, and from far off San Francisco her daughter's voice greets her expectant ear.

The crowded banquet hall is forgotten; she and that little daughter are alone in the world. Tears course down her cheeks as she speaks hardly more than a word. "My daughter, I love you." The son leads her back to her chair and Ridgewood has seen the reunion of mother and daughter over the Transcontinental line.

Can skepticism withstand such evidence? The miracle has been performed; they have seen and heard, and they are convinced. Telephonic connections have been established with the most westerly city of the nation and the audience bursts into applause. Congratulations and praise for the wonderful achievement of the Bell System are heard on all sides. So strongly are people impressed that many express their thanks in writing. Often letter after letter is received by the Company from persons who have never before shown any interest whatsoever in the Telephone Company.

"No person with any degree of imagination or vision could fail to be fascinated by its magical wonders. It was like a fairy tale. I had read and heard about this demonstration but I never appreciated what it really was until last Saturday. . . . It will no doubt please you to know that you have made many hundreds of influential friends throughout the country who will remember your princely generosity." This is the way a prominent attorney expressed himself after attending a banquet at which transcontinental telephony was demonstrated.

The president of a New York bank writes in this vein: "It was almost weird to realize the wonder of it all and I believe I can safely say that the inspiring and instructive demonstration of the telephone company's great achievement will stand out prominently in the memories of everyone who had the good fortune to be present."

An author says: "It is difficult to measure the results of such an occasion when the miracle of transcontinental speech was brought so vividly and entertainingly to the attention."

Still another writes that the transcontinental telephone demonstration "so impressed us as to stand out in our memories for the rest of our lives as a notable, nay more—a marvelous occasion . . . which will doubtless be known in the club annals not as a joint meeting" (between New York and San Francisco) "but as a Telephone Meeting."

A prominent New York counselor sends this tribute: "Two things were incontrovertibly established in the minds of everyone present, first that talking to San Francisco was a commercial fact, and second that you have a most marvelous organization and system. The precision and speed with which the whole thing was handled was positively uncanny."

A prominent civic organization forwarded a set of resolutions in which the following was embodied:

Resolved, that the Board of Trade of the City of ..... express to the New York Telephone Company its appreciation and commendation of its "public spirited service and courtesy."

An association of women embodied this statement in their resolutions: "That the .....express to the New York Telephone Company its appreciation and commendation of the public-spirited policies and practices it maintains and of the able and courteous manner in which it provides a universal, dependable, and progressive service."

These few quotations give some inkling of the appreciation shown by the public after they have been convinced that transcontinental telephony is an established fact. Through the transcontinental telephone demonstrations the public is coming to realize the wonderful service which has been built up in forty years under the exceptionally efficient organization of the Bell System.

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The TREND of REGULATION

By R. V. Marye, General Attorney

A Utility Cannot Complain of Its Competitor's Rates

THE city of Rosedale, California, complained to the railroad commission that the rates of the Pacific Gas and Electric Company in Rosedale, were too low. It appeared that the city itself was not a consumer of the Pacific Company's and that it owned and operated an electric distributing system which paralleled the Pacific Company's system through the city. The Commission held, on February 21, 1916, that since the city had no relation with the company, save that of a competitor, the complaint could not be sustained.

Monopoly Advisable. Stronger of Two Applicants Awarded Franchise

THE Public Utilities Commission of Idaho recently had before it two applicants, each of whom sought authority to construct and operate a gas plant in the city of Idaho Falls. The Commission, on February 12, 1916, in passing upon said applications, stated that its policy is and always has been that a public utility should have a monopoly, so long as it gives adequate service at reasonable rates. That ordinarily preference should be given to the party first making application for the right to operate in any territory, but that since it appears that the second applicant in this case is the stronger financially, and, therefore, better able to carry its plans into effect within a reasonable time, public convenience will be best served by granting to it a certificate of convenience.

Contract to Give Exclusive Service Invalid

THE Eastern Shore Development Steamship Company contracted to carry the Sunday edition of the Baltimore *Sun* on its first boat out on Sunday morning and agreed to exclude all other Sunday newspapers from said boat. The publishers of the Baltimore *American* complained to the Public Service Commission of Maryland, which held, on February 6, 1916, that said contract was unreasonable and discriminatory and that the offer of the steamboat company to charter another boat for the use of competing publishers did not divest the contract of its unduly discriminatory character. The Commission, therefore, directed that should the steamship company elect to continue such service, it must extend it to any other publisher who might desire to make use of it.

Minimum Charge Approved

THE Pennsylvania Public Service Commission in passing upon the complaint of the New Castle Box Company *vs.* The City of New Castle Water Company states, that minimum rates to be charged by public utilities have been before courts and commissions in many cases and have been many times approved. That water can be supplied only by means of a system of pipes and by the maintenance of force of some kind sufficient to impel the water through such pipes and by the construction and maintenance of reservoirs or other means of keeping the necessary supply of water on hand. That apart from the actual furnishing of the water, this readiness to serve, preceded as it often is by large outlays and the requirements of accumulated capital, is in itself a proper basis for respondent's minimum charge, and that said charge must also include compensation for the water actually supplied.

Preferential Rates to Ministers Prohibited

THE Public Service Commission of Indiana, in a recent opinion, held that the practice of giving preferential rates to ministers was discriminatory and must be discontinued, and that no preference should be given to any subscriber on account of his calling or business.

Free Carriage of Letter Carriers

JOHN W. ERICSON, president of the local branch of the National Association of Letter Carriers, complained to the Public Utilities Commission of Illinois that the Evanston Street Railway Company refused to carry letter carriers free of charge. It appeared that an ordinance of the city required such free carriage. Despite the fact that a previous conference ruling of the Commission had held that such carriage was not against public policy and that the Statute did not prevent it, the Commission dismissed the complaint, on February 17, 1916, holding that it had no power to enforce an ordinance and that the Statute and its said conference ruling merely permit such free carriage without imposing any duty upon the carrier to grant it.

Rates of Municipally Owned Utility Need Not Be Reasonable

THE Supreme Court of Iowa, in Edgerly et al. *vs.* the city of Ottumwa held, on February 17, 1916, among other things, that, in view of the statutory authority of the trustee of the Municipal Water Works System to fix the rates thereof, at such a standard that sufficient revenues will be obtained, to maintain and extend the system and to provide for the payment of the cost of the construction thereof, the rates charged by said Municipal System need not be reasonable.

Police Power

THE Supreme Court of North Carolina, in Skinner et al. *vs.* Thomas, decided March 1, 1916, defined the police power as an attribute of sovereignty and the power to protect the public health and safety, to preserve good order and the public morals, to protect the lives and property of the citizens, and to govern men and things by any legislation proper to that end. The Court states further, that the exercise of said power is left largely to the discretion of the lawmaking body and that the authority of the courts cannot be invoked unless there is an unnecessary interference with the rights of the citizens, or there is no reasonable relation between the Statute enacted and the end or purpose sought to be accomplished.

Tampering with Meter Justifies Discontinuance of Service

W. B. BERTRAM complained to the Corporation Commission of Arizona that the Pacific Gas and Electric Company had discontinued serving gas and electricity at his residence and asked that the Commission direct the company to restore service. The company answered that the erratic performances of Bertram's electric meter and the small amount of current recorded, led it to believe that the electric meter or wires had been tampered with, for the purpose of under-recording the amount of current used.

The Commission held, on February 24, 1916, that the company was justified in discontinuing electric service if it had good reason to believe that the meter was being manipulated. It directed that gas service be restored since the fact that the customer had tampered with the electric meter did not justify discontinuance of the gas service.

Competition Unwholesome

THE Relief Electric Light, Heat & Power Company, which had secured letters patent authorizing it to operate in the Borough of Washington, Pa., and which had also secured an ordinance from said Borough, authorizing such operation, applied to the Public Service Commission for a certificate of public convenience. The Commission refused to issue said certificate since another company was already operating in the Borough. The Relief Company thereupon appealed to the Superior Court which held, on March 1, 1916, that the Legislature does not surrender its right of regulatory control of public service companies by the grants of franchises to corporations. That said franchises are granted and acquired subject to the exercise of the police power. That the Public Service Company Law is a valid exercise of the police power. That the order of the Commission was a reasonable exercise of its regulatory control over public utility corporations. That unrestricted competition in public utilities has been definitely shown by experience to be ultimately unwholesome to the community; the invariable rule being that in addition to the cutting and destruction of rates and other practices outside the range of sound business, one company is absorbed and the survivor recoups its losses at the expense of the public, through excessive charges. That unrestricted competition and regulation are inconsistent and that in denying the Relief Company the right to compete, the Commission was protecting and enforcing the rights of the public in performing a duty enjoined on it by the letter and spirit of said Act as well as by the mandate of the Federal Constitution which prohibits the taking of property without due process of law.

Contracts for Free and Reduced Rate Service Void

THE Railroad Commission of California, on the application of the North Fork Ditch Company for the adjustment of its water rates held, on March 17, 1916, that certain contracts of the company, under one of which it undertook to deliver water to certain property free in return for the services of its secretary, and under another of which it undertook to perpetually deliver water at about half the regular rate in payment for a reservoir site, were void, as they were clearly detrimental to the other consumers of the company.

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Annual Outdoor Meet

Winner of Bicycle Race

DESPITE the rain nearly five hundred people attended the spring games of the New York Plant Athletic Association at Glencoe Oval on Saturday, June 3, 1916. While the inclement weather cut down the attendance and reduced the entries in the various events, the competition was spirited and the lucky ones knew they were in a race. The track was a small one and not very wide, so the athletes were forced to use their heads as well as their limbs, and some pretty duels of brain and brawn resulted.

The inter-force relay was undoubtedly the feature, and resulted in a close victory for Mr. Mellinger's force, who "Engineered" their way to a clever victory over the Inspectors, with the Constructionites third.

Myles McHugh, Junior, national and military champion, at 880 yards gave an exhibition with Ed Sweeney, a club-mate, and turned four furlongs in the clinking time of 1 minute 57 4/5 seconds Westchester Plant gave the New York Plant boys a lesson in tug-of-war pulling, while two old favorites, Gallagher in the walk and Ruggierro in the three-quarter mile, came through with clever victories from the honor marks, despite liberal handicaps.

The advisability of holding novice events was shown when W. Lane handily took down first prize in the 150-yard novice. With a little experience Lane should develop into a good man. A number of the winners came from unexpected quarters, but were all boys who are "on the improve," and who, through hard and faithful training, have finally arrived.

Finish of 300-yards Open

Less than a foot separated the first four men in the open 300-yard handicap, but the field in the 1000-yard run was fairly well strung out, the handicapper setting too hard a task for the scratch man, who at no time had a chance to come through.

A ten-mile walk will be held in the fall, details of which will be announced later.

Winners in the various events of the games on June 3 were:

150-yard Run—Novice. 1, W. R. Lane; 2, W. J. Smith; 3, C. G. Lewis. Time, 19 4/5 seconds.

300-yard Run—Handicap. 1, A. L. Mamel, 8 yards; 2, W. J. Wagner, 3 yards; 3, F. W. Conway, 13 yards Time, 39 4/5 seconds.

¾-mile Run—Handicap. 1, F. Ruggierro, scratch; 2, T. Wynne, 48 yards; 3, J. Scully, 24 yards.

300-yard Run—Open Handicap. 1, J. F. McDonald, B. & S., 14 yards; 2, W. Lynch, Plant, N. J., 6 yards; 3, H. Edwards, Plant Acctg., 5 yards. Time, 40 seconds.

The "Plant 880"—Exhibition Half-mile Run. 1, Myles McHugh, Pastime A. C.; 2, E. Sweeney, Pastime A. C.; Time, 1.57 4/5.

500-yard Run—Novice. 1, J. G. Timko; 2, C. O. Ebel. Time, 1.21 1/5 seconds.

880-yard Walk—Handicap. 1, J. J. Gallagher, scratch; 2, G. Brown, 60 yards; 3, W. H. Scott, 50 yards. Time, 3 minutes 55 4/5 seconds.

Walking Contest

Westchester Team Which Won the Tug-of-War

Inter-force Relay

600-yard Run—Handicap. 1, J. J. Scully, 18 yards; 2 R. Buist, scratch; 3, F. Capelli, 14 yards. Time, 1.28 4/5.

Exhibition 2-mile Bicycle Race. 1, H. Lightfine; 2, L. Gaffney; 3, O. Brandes. Time, 7 minutes 40 seconds.

1000-yard Run—Open Handicap. 1, E. J. Kelly, Plant Acctg., 36 yards; 2, C. L. Coll, Plant, N. J., 10 yards; 3, W. Goodman, Acctg., N. J., 30 yards. Time, 2 minutes, 26 4/5 seconds.

Throwing the Javelin. 1, J. Almstedt; 2, P. Kaiser; 3, F. Ruggierro. Distance, 118 feet.

Tug-of-War. Won by Plant Westchester team. 1, A. McDougall; 2, H. Hess; 3, G. Johnson No. 1.;4, A. Lang; 5, W. Worley.

Inter-Force Relay—Scratch. Won by Engineers team.—1, M. Ruiz;2, W. Quinn;3, W. Wagner; 4, R. Buist. Second—Inspectors' team. 1, Y. Di Pietro; 2, F. Ruggierro; 3, C. Lewis; 4, A. Mamel. Third — Construction team. 1, F. McGowan; 2, J. Fitzpatrick; 3, G. Casey; 4, W. Arenholz. Time, 4 minutes 5 seconds.

Myles McHugh, Champion

Play Ball!

A SERIES of baseball games has been arranged between teams representing the following departments: Engineering, Traffic Engineering, Commercial Engineering, Advertising.

Much good-natured rivalry is resulting from these games and members of the Departments who do not indulge in the national pastime, including the ladies, are turning out and rooting for their teams.

Traffic Engineering and Engineering Department Baseball Teams

L. H. Griffiths, the "Swat Mulligan" of the Traffic Engineers

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NEW YORK TELEPHONE COMPANY

GENERAL OFFICES, 15 DEY ST., NEW YORK

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F. H. BETHELL, Vice-President
H. F THURBER, Vice-President
FORD HUNTINGTON, Vice-President
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Supt. Buildings & Supplies

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Albany

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321 Montgomery Street
Syracuse

Western

H. W. GAUL
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Telephone Building
Buffalo

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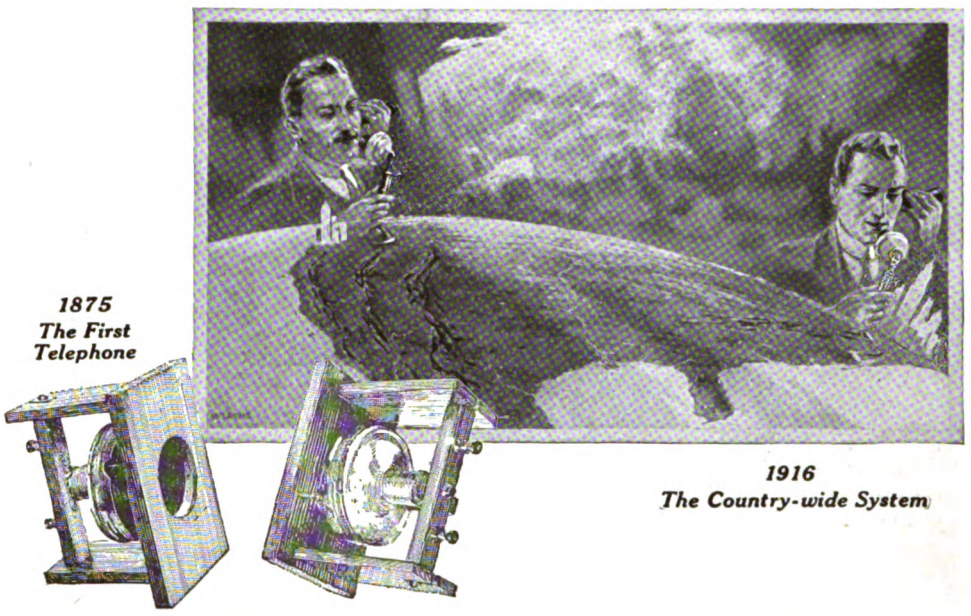

1875
The First Telephone

1916
The Country-wide System

Forty-one Years of Telephone Progress

The faint musical sound of a plucked spring was electrically carried from one room to another and recognized on June 2, 1875. That sound was the birth-cry of the telephone.

The original instrument—the very first telephone in the world—is shown in the picture above.

From this now-historic instrument has been developed an art of profound importance in the world's civilization.

At this anniversary time, the Bell System looks back on forty-one years of scientific achievement and economic progress, and gives this account of its stewardship:

It has provided a system of communication adequate to public needs and sufficiently in advance of existing conditions to meet all private demands or national emergencies.

It has made the telephone the most economical servant of the people for social and commercial intercourse.

It has organized an operating staff loyal to public interests and ideals; and by its policy of service it has won the appreciation and good will of the people.

With these things in mind, the Bell System looks forward with confidence to a future of greater opportunity and greater achievement.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy ***One System*** ***Universal Service***

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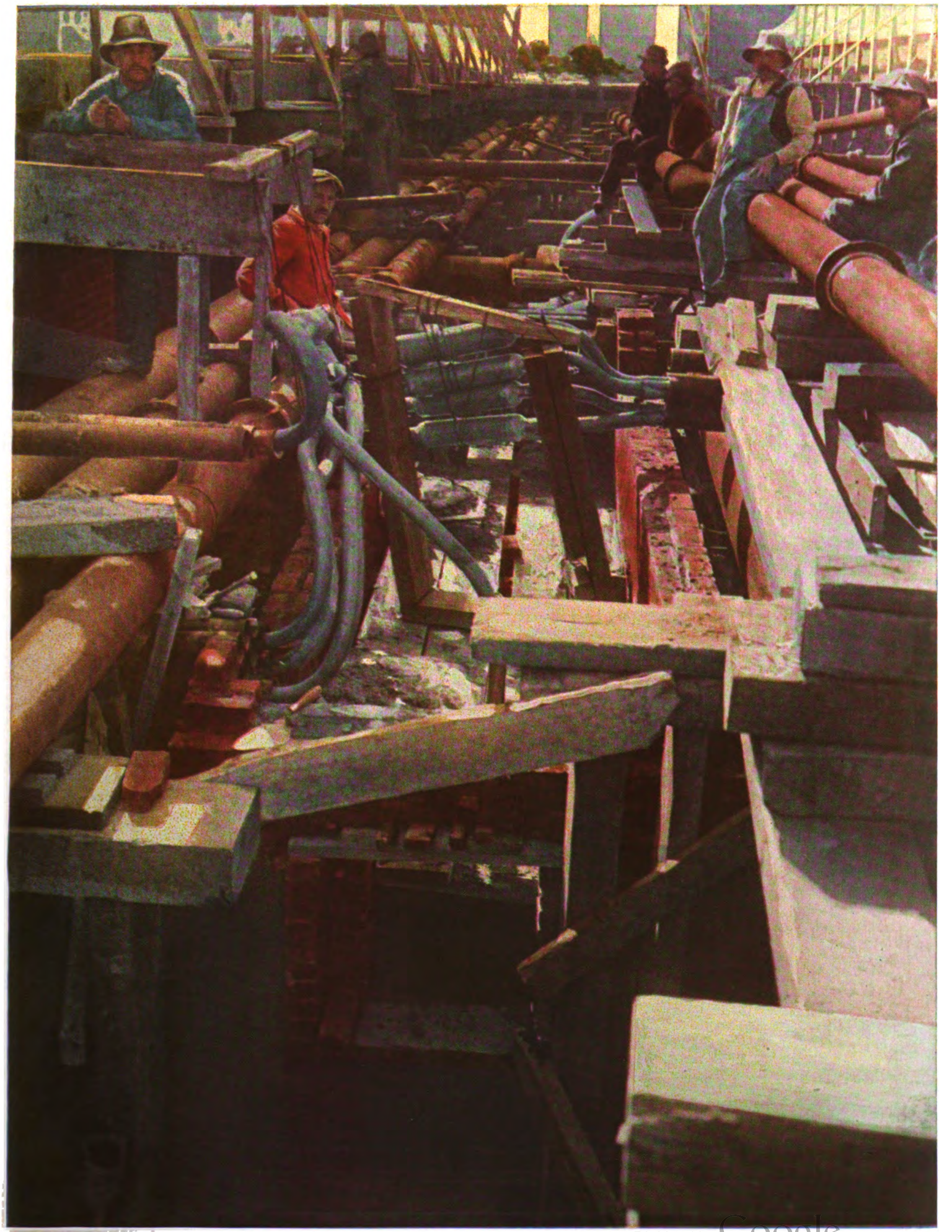
Vol. 7, No. 8 AUGUST, 1916

The TELEPHONE REVIEW



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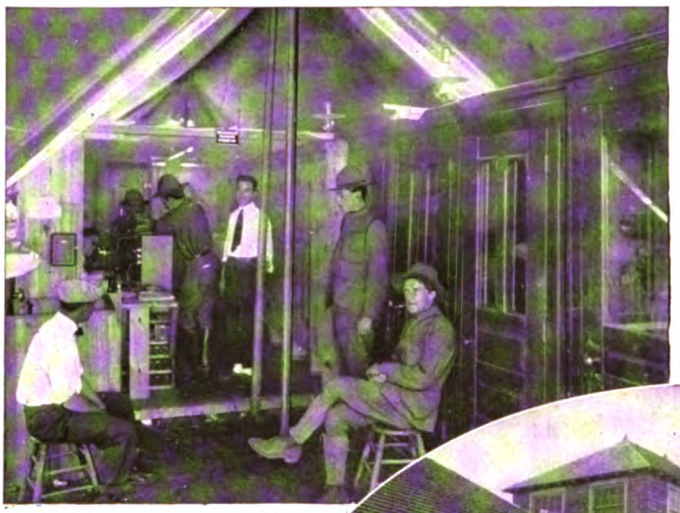
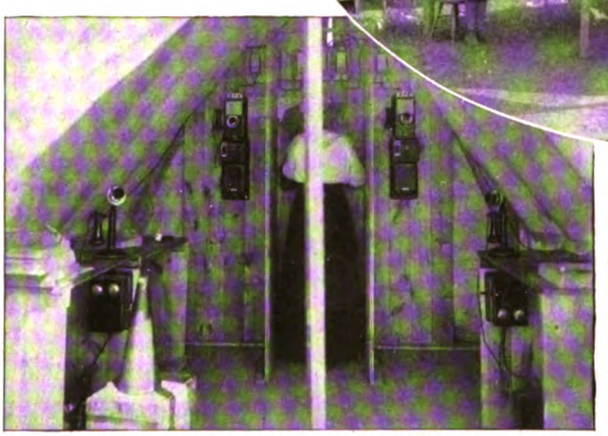
An "Easy One" For the Plant



Where the soldiers' "Good-bys" Were Said

Switchboard and Temporary Booths

Telephone Headquarters at the Main Camp



At the Cavalry Camp, Buckelew Farm

Telephone Tent at Military Headquarters

Additional Booths for the Cavalry, Showing Exterior of Telephone Tent at Left

TELEPHONES FOR THE NEW JERSEY STATE ENCAMPMENT AT SEAGIRT

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The TELEPHONE REVIEW

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VOLUME 7 — NUMBER 8

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

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Safeguarding the Future

WE print a page of statistics for the benefit of employees who took advantage of the second opportunity which the American Telephone and Telegraph Company offered to purchase stock at a reduced figure on the partial payment plan.

A total of 2,800 men and 2,419 women, making 5,219 employees of the New York Telephone Company, subscribed for 10,564 shares at the rate of $118 per share under the extension of the plan effective March 1, 1916. Of these, 1,563 men and 722 women, making 2,285 employees, were subscribers under the original plan effective January 1, 1915, at the rate of $110 per share.

A total of 6,703 men and 5,190 women, making 11,893 employees, have subscribed under both plans for 36,838 shares of the A. T. & T. Co.'s stock. This represents about 43 per cent. of the total number of employees of the New York Telephone Company. The average of slightly over three shares per subscribing employee is very high considering the fact that the maximum number of shares for which any employee could subscribe was ten.

The total cost of these shares to the employees is $4,136,672, of which they will pay in installments out of their salaries a total of $3,331,285.92, the balance of $805,406.08 being the accumulation of their dividends less interest charges.

The subscribers under the original plan will have their stock full paid on November 30, 1918; the subscribers under the extension will have their stock full paid on April 30, 1920.

Holders of this stock who are employees of the Company enjoy a double satisfaction in their investment: first, they have the security guaranteed by the prosperity of the Bell System, and second, they have the sense of proprietorship which makes their work become a part of the "nest egg" which they are laying up for themselves.

It is a shame and a pity that so much of the hard-earned money of people who can ill afford to lose it is filched away from them year after year by tempting offers of unscrupulous promoters when safe and sound investments such as this A. T. & T. stock are available. This stock, of course, is held up as a shining example of the fortunes that have been made by investors in infant enterprises, but the fact is ignored that the telephone business has prospered solely through the ability and integrity of the men who have conducted it.

This is the only safeguard investors can have in any enterprise, and unless it is known to exist, the safe way is to choose some other investment where it is a known quantity.

This very substantial ownership in the business on the part of the employees of the New York Telephone Company is another conclusive evidence to the Company, to its employees, and to the public that we are indeed a happy family.

Telephone Way the Best

WHY is it that some persons will receive a caller with gracious courtesy and discuss business and airy nothings for time interminable because they do not know how to end the visit without abruptness, and yet when called on the telephone, perchance by the same person, they will invariably be brusque and curt?

A young lady was asked recently why one of her callers always prolonged his visits so late and she replied that he did not know how to say good-by!

A great deal of tact is often required in dismissing a caller courteously and making him feel that the visit is over, but there is no reason why a visit should be extended indefinitely after the object is accomplished, at least this is so in business. There is other business to be transacted which must receive attention, and by overstaying a visit the time of two persons is wasted without any increase in the display of courtesy.

The telephone way is the better way, whether you call or telephone, say what there is to be said and be done with it, only do it courteously. Instead of this being abrupt and rude it is the essence of courtesy when it is done right. Instead of it being more difficult to be courteous over the telephone, really it is easier, because there is not such a strain upon it.

It is much easier to leave a pleasant impression by a brief and breezy telephone conversation than by a visit that takes up more of a busy man's time and may bore and irritate him. The telephone way is always best.

Telephone Courtesy

THE General Electric Company, Schenectady, has placed near each telephone throughout its entire plant a little card, 3¼ by 4¼ inches, reading as follows:

WORTH REMEMBERING

Many a man has dug his grave with his tongue.

The manner in which you use a telephone indicates largely what you are.

Discourtesy hurts the person who uses it more than the person to whom it is directed.

One discourteous act by you over the telephone does an injury to every man whose name is on the pay roll; and a place on the pay roll beats one in the bread line.

It is not always what a man knows; it is what he does that counts. Opportunity plays no favorites.

Knockers do not kill men—they kill business.

Chickens come home to roost; so do harsh words.

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Data on Purchase of A. T. & T. Co. Stock

By Employees of the Bell System as Per Extension Plan Dated March 1, 1916

$118.00 Per Share

TERMS: Payments, $2.00 Per Month; Dividend, 8% Per Year; Interest, 4% Per Year

Designed and Prepared by P. A. Dunne, Traffic Department, New York Telephone Co., for "The Telephone Review"

	End of Quarter		1 share	2 shares	3 shares	4 shares	5 shares	6 shares	7 shares	8 shares	9 shares	10 shares
Total Cash Paid	1916	July 31.....	$ 6.00	$ 12.00	$ 18.00	$ 24.00	$ 30.00	$ 36.00	$ 42.00	$ 48.00	$ 54.00	$ 60.00
		Oct. 31.....	12.00	24.00	36.00	48.00	60.00	72.00	84.00	96.00	108.00	120.00
	1917	Jan. 31.....	18.00	36.00	54.00	72.00	90.00	108.00	126.00	144.00	162.00	180.00
		Apr. 30.....	24.00	48.00	72.00	96.00	120.00	144.00	168.00	192.00	216.00	240.00
		July 31.....	30.00	60.00	90.00	120.00	150.00	180.00	210.00	240.00	270.00	300.00
		Oct. 31.....	36.00	72.00	108.00	144.00	180.00	216.00	252.00	288.00	324.00	360.00
	1918	Jan. 31.....	42.00	84.00	126.00	168.00	210.00	252.00	294.00	336.00	378.00	420.00
		Apr. 30.....	48.00	96.00	144.00	192.00	240.00	288.00	336.00	384.00	432.00	480.00
		July 31.....	54.00	108.00	162.00	216.00	270.00	324.00	378.00	432.00	486.00	540.00
		Oct. 31.....	60.00	120.00	180.00	240.00	300.00	360.00	420.00	480.00	540.00	600.00
	1919	Jan. 31.....	66.00	132.00	198.00	264.00	330.00	396.00	462.00	528.00	594.00	660.00
		Apr. 30.....	72.00	144.00	216.00	288.00	360.00	432.00	504.00	576.00	648.00	720.00
		July 31.....	78.00	156.00	234.00	312.00	390.00	468.00	546.00	624.00	702.00	780.00
		Oct. 31.....	84.00	168.00	252.00	336.00	420.00	504.00	588.00	672.00	756.00	840.00
	1920	Jan. 31.....	90.00	180.00	270.00	360.00	450.00	540.00	630.00	720.00	810.00	900.00
		Apr. 30.....	95.73	191.47	287.19	382.93	478.65	574.35	670.10	765.82	861.55	957.29
Total Dividends Rec'd †	1916	July 31.....	$ 2.00	$ 4.00	$ 6.00	$ 8.00	$ 10.00	$ 12.00	$ 14.00	$ 16.00	$ 18.00	$ 20.00
		Oct. 31.....	4.00	8.00	12.00	16.00	20.00	24.00	28.00	32.00	36.00	40.00
	1917	Jan. 31.....	6.00	12.00	18.00	24.00	30.00	36.00	42.00	48.00	54.00	60.00
		Apr. 30.....	8.00	16.00	24.00	32.00	40.00	48.00	56.00	64.00	72.00	80.00
		July 31.....	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00
		Oct. 31.....	12.00	24.00	36.00	48.00	60.00	72.00	84.00	96.00	108.00	120.00
	1918	Jan. 31.....	14.00	28.00	42.00	56.00	70.00	84.00	98.00	112.00	126.00	140.00
		Apr. 30.....	16.00	32.00	48.00	64.00	80.00	96.00	112.00	128.00	144.00	160.00
		July 31.....	18.00	36.00	54.00	72.00	90.00	108.00	126.00	144.00	162.00	180.00
		Oct. 31.....	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00	200.00
	1919	Jan. 31.....	22.00	44.00	66.00	88.00	110.00	132.00	154.00	176.00	198.00	220.00
		Apr. 30.....	24.00	48.00	72.00	96.00	120.00	144.00	168.00	192.00	216.00	240.00
		July 31.....	26.00	52.00	78.00	104.00	130.00	156.00	182.00	208.00	234.00	260.00
		Oct. 31.....	28.00	56.00	84.00	112.00	140.00	168.00	196.00	224.00	252.00	280.00
	1920	Jan. 31.....	30.00	60.00	90.00	120.00	150.00	180.00	210.00	240.00	270.00	300.00
		Apr. 30.....	32.00	64.00	96.00	128.00	160.00	192.00	224.00	256.00	288.00	320.00
Total Interest Paid	1916	July 31.....	$ 1.15	$ 2.29	$ 3.44	$ 4.59	$ 5.73	$ 6.88	$ 8.03	$ 9.17	$ 10.32	$ 11.47
		Oct. 31.....	2.23	4.45	6.67	8.90	11.12	13.35	15.58	17.80	20.02	22.25
	1917	Jan. 31.....	3.24	6.47	9.70	12.94	16.17	19.40	22.64	25.87	29.10	32.34
		Apr. 30.....	4.18	8.35	12.52	16.70	20.87	25.03	29.21	33.38	37.55	41.73
		July 31.....	5.05	10.09	15.13	20.17	25.21	30.24	35.29	40.33	45.37	50.42
		Oct. 31.....	5.85	11.68	17.52	23.36	29.20	35.02	40.87	46.71	52.54	58.39
	1918	Jan. 31.....	6.58	13.13	19.70	26.26	32.83	39.37	45.95	52.51	59.07	65.64
		Apr. 30.....	7.23	14.44	21.66	28.87	36.09	43.29	50.52	57.73	64.94	72.17
		July 31.....	7.81	15.60	23.40	31.19	38.99	46.76	54.57	62.36	70.15	77.96
		Oct. 31.....	8.31	16.61	24.91	33.21	41.51	49.79	58.10	66.40	74.69	83.01
	1919	Jan. 31.....	8.74	17.47	26.20	34.93	43.66	52.37	61.11	69.84	78.56	87.31
		Apr. 30.....	9.09	18.18	27.26	36.35	45.43	54.49	63.59	72.67	81.75	90.85
		July 31.....	9.37	18.74	28.09	37.46	46.82	56.16	65.53	74.89	84.25	93.63
		Oct. 31.....	9.57	19.14	28.69	38.26	47.82	57.36	66.93	76.49	86.05	95.63
	1920	Jan. 31.....	9.69	19.38	29.06	38.75	48.43	58.09	67.79	77.47	87.15	96.85
		Apr. 30.....	9.73	19.47	29.19	38.93	48.65	58.35	68.10	77.82	87.55	97.29
Total Equity	1916	July 31.....	$ 6.85	$ 13.71	$ 20.56	$ 27.41	$ 34.27	$ 41.12	$ 47.97	$ 54.83	$ 61.68	$ 68.53
		Oct. 31.....	13.77	27.55	41.33	55.10	68.88	82.65	96.42	110.20	123.98	137.75
	1917	Jan. 31.....	20.76	41.53	62.30	83.06	103.83	124.60	145.36	166.13	186.90	207.66
		Apr. 30.....	27.82	55.65	83.48	111.30	139.13	166.97	194.79	222.62	250.45	278.27
		July 31.....	34.95	69.91	104.87	139.83	174.79	209.76	244.71	279.67	314.63	349.58
		Oct. 31.....	42.15	84.32	126.48	168.64	210.80	252.98	295.13	337.29	379.46	421.61
	1918	Jan. 31.....	49.42	98.87	148.30	197.74	247.17	296.63	346.05	395.49	444.93	494.36
		Apr. 30.....	56.77	113.56	170.34	227.13	283.91	340.71	397.48	454.27	511.06	567.83
		July 31.....	64.19	128.40	192.60	256.81	321.01	385.24	449.43	513.64	577.85	642.04
		Oct. 31.....	71.69	143.39	215.09	286.79	358.49	430.21	501.90	573.60	645.31	716.99
	1919	Jan. 31.....	79.26	158.53	237.80	317.07	396.34	475.63	554.89	634.16	713.44	792.69
		Apr. 30.....	86.91	173.82	260.74	347.65	434.57	521.51	608.41	695.33	782.25	869.15
		July 31.....	94.63	189.26	283.91	378.54	473.18	567.84	662.47	757.11	851.75	946.37
		Oct. 31.....	102.43	204.86	307.31	409.74	512.18	614.64	717.07	819.51	921.95	1024.37
	1920	Jan. 31.....	110.31	220.62	330.94	441.25	551.57	661.91	772.21	882.53	992.85	1103.15
		Apr. 30.....	118.00	236.00	354.00	472.00	590.00	708.00	826.00	944.00	1062.00	1180.00
Tot. Amt. to be Paid on Stock	1916	July 31.....	$ 111.15	$ 222.29	$ 333.44	$ 444.59	$ 555.73	$ 666.88	$ 778.03	$ 889.17	$1000.32	$1111.47
		Oct. 31.....	104.23	208.45	312.67	416.90	521.12	625.35	729.58	833.80	938.02	1042.25
	1917	Jan. 31.....	97.24	194.47	291.70	388.94	486.17	583.40	680.64	777.87	875.10	972.34
		Apr. 30.....	90.18	180.35	270.52	360.70	450.87	541.03	631.21	721.38	811.55	901.73
		July 31.....	83.05	166.09	249.13	332.17	415.21	498.24	581.29	664.33	747.37	830.42
		Oct. 31.....	75.85	151.68	227.52	303.36	379.20	455.02	530.87	606.71	682.54	758.39
	1918	Jan. 31.....	68.58	137.13	205.70	274.26	342.83	411.37	479.95	548.51	617.07	685.64
		Apr. 30.....	*61.23	*122.44	*183.66	*244.87	*306.09	*367.29	*428.52	*489.73	*550.94	*612.17
		July 31.....	53.81	107.60	161.40	215.19	268.99	322.76	376.57	430.36	484.15	537.96
		Oct. 31.....	46.31	92.61	138.91	185.21	231.51	277.79	324.10	370.40	416.69	463.01
	1919	Jan. 31.....	38.74	77.47	116.20	154.93	193.66	232.37	271.11	309.84	348.56	387.31
		Apr. 30.....	31.09	62.18	93.26	124.35	155.43	186.49	217.59	248.67	279.75	310.85
		July 31.....	23.37	46.74	70.09	93.46	116.82	140.16	163.53	186.89	210.25	233.63
		Oct. 31.....	15.57	31.14	46.69	62.26	77.82	93.36	108.93	124.49	140.05	155.63
	1920	Jan. 31.....	7.69	15.38	23.06	30.75	38.43	46.09	53.79	61.47	69.15	76.85
		Apr. 30.....	–	–	–	–	–	–	–	–	–	–

*Balance due on stock May 1, 1918. †These figures are based on 8% dividends being declared. Note: These figures are based on the official interest as charged by the A. T. & T. Co.

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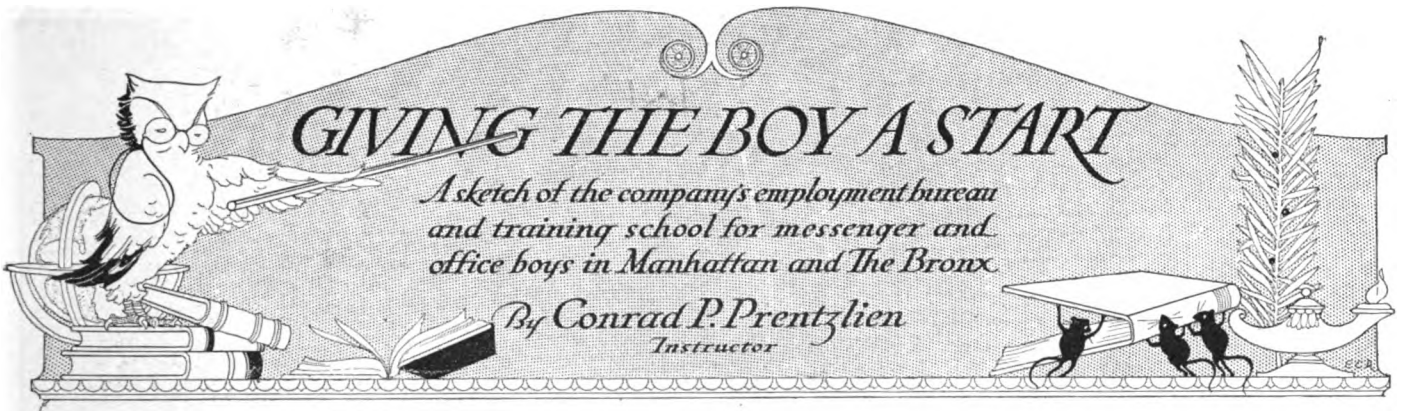


GIVING THE BOY A START

A sketch of the company's employment bureau and training school for messenger and office boys in Manhattan and The Bronx

By Conrad P. Prentzlien
Instructor

EXCEEDINGLY vigilant have been the efforts of modern business to adjust scientifically its material to the machinery of the industrial and commercial world. This problem has been solved in a large measure through the establishment of training schools. The primary purpose of these schools is to educate employees directly for the field of work for which they have been engaged. By this method the efficiency of the employee has been materially increased and the product of his labor improved. Incidentally, organized business has achieved more recognition for itself as an educational institution than at any period in its history.

About four years ago a group of men representing the Plant, Traffic, and Commercial Departments of this Company met to discuss the conditions existing at that time in relation to office boys.

The following excerpts from the notes of that conference sum up the situation briefly:

> It seems that at the present time boys are engaged and put to work without any training, the general practice being to hire a new boy and turn him over to one of the older boys, who is to instruct him what to do. But these older boys have not had enough experience really to teach the new boys what they ought to know. The general result of this method is that a large proportion of our office and messenger boys are lacking in courtesy, do not look after their appearance properly, cannot make themselves clearly understood over the telephone, and are not being trained in a way which would permit their advancing very far into the business world.

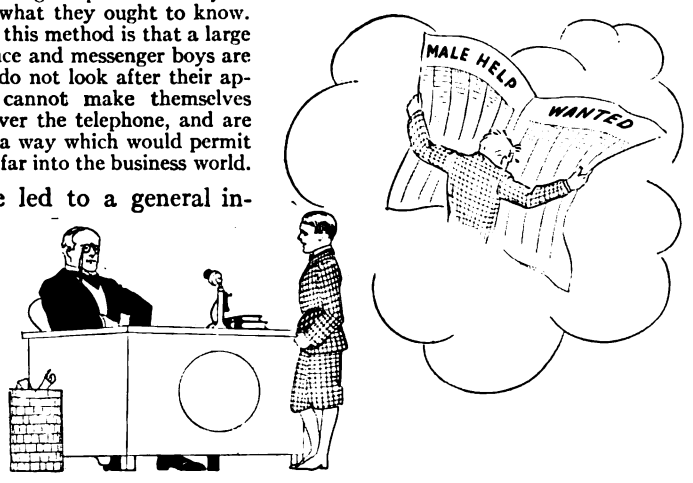
This conference led to a general instruction, dated January 1, 1911, providing for the establishment of a Training School for Office and Messenger Boys, and pointing out the additional fact that "It is unfair to the boys not to give them a better training as a basis for advancement."

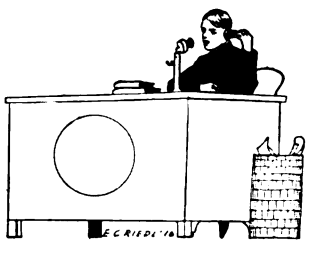
Incidentally the establishment of the Training School brought with it another factor. This was the establishment of a Central Employment Bureau for office and messenger boys. Under the old practice, a boy seeking employment would go to one or two departments and on being informed that there was no vacancy, would abandon the idea of connecting himself with the Company. In this way many a prospective employee, who might have been a valuable asset to the business, was lost.

It was also found that different departments were advertising simultaneously for boys, a fact which involved waste of energy, time, and money. Conditions of this kind are now entirely eliminated. The fact that there exists a central employment bureau for office boys is generally understood, and applicants are referred to the Bureau from all parts of the city, and the departments in turn call on the Bureau when a vacancy exists. So far as advertising is concerned, conditions have been reversed during the past few years. Formerly it was necessary to advertise continuously in order to maintain a desirable list of applicants, but at present advertising is necessary only under unusual conditions. There is another feature which was incidental to the establishment of the Central Employment Bureau. Department reorganizations at times made it necessary to dispense with the services of an office boy. Before discharging, an attempt was made through the efforts of a department representative to negotiate a transfer to another department. This plan, however, did not always work out successfully, and frequently terminated in the dismissal of an employee who, by reason of his experience, might have been valuable to another department. The Instructor at the school is now the intermediate party in negotiations of this kind. A considerable number of transfers have been arranged, the results of which have been highly satisfactory.

The questions most frequently asked of the Employment Bureau can be summed up and placed into three groups. First, "What are the necessary requirements for office boys?" Second, "By what method are these qualifications determined?" Third, "Is it possible to analyze characteristics and possible trends before the faculties have reached a state of maturity?"

There is a physical and mental requirement. The physical requirement may be dismissed with a brief statement that the applicant must be in sound health. In regard to the mental requirement, it has become necessary to establish a standard. It is generally conceded that the entry of employees from colleges, scientific schools, and high schools has raised the standard of business higher than it has been at any other period in its history. In order to meet the situation, an applicant for the position of office boy is required to give evidence of the fact that he has satisfactorily completed at least his elementary education. In other words, he must have





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graduated from school. There is another reason for this requirement. A careful study has brought out the fact that although a number of boys do not complete their elementary school course because their parents are either unable or unwilling to render them the needed assistance, these cases are in the minority.

An investigation of school records has brought out the fact that the reason for which the majority of boys leave school before their course is completed is that they are unwilling to give the proper attention to their studies, or they do not wish to be amenable to discipline, or the temptation to earn pocket money is so strong that their education is not considered.

Much may be said on both sides of this question, but, all things equal, the boy who has graduated from school is in a better position to advance his own interests as well as the interests of the Company.

The second question is: "How are the qualifications of office boy determined?" In other words, in a large corporation where the fields of work are so highly diversified, how do you solve the problem of selecting the right boy for the right place? A brief description will suffice to illustrate the method. When an office boy is requisitioned, the department representative invariably states what kind of a boy is wanted. These facts have been tabulated, because they express the leading qualifications of an employee from the employer's point of view and are at the time a statement of the product of his experience. Also, a study of the characteristics of employees who have obtained the stamp of approval by the representative of the department to which they have been assigned has been of considerable value. This method is flexible and permits any form of adjustment that business may dictate.

If the Youngster Passes the First Inspection, He Is Asked to Fill Out an Application for a Position

The third group of considerations is suggested by the question: "Is it possible to analyze characteristics and possible trends before the faculties have reached a stage of maturity?"

The discussion of this subject may properly be classified under the heading of "Character Analysis." An effort has recently been made by vocational schools and other educational institutions to classify the characteristics and natural inclinations of human nature and reduce these classifications to general laws. This method has received the highest commendation of the leading educators of this country, and their observations and comments have converted what was formerly an ordinary guess into a judgment.

Character is a growth, and there is not an age in human life in which some natural tendency or characteristic trend cannot be observed. The leading characteristics of boys are decidedly marked, and a proper set of well-directed questions, together with careful observations and recourse to records, permit a fairly accurate analysis. The following are some of the characteristics that can be detected by this method and which form the basis of selections:

Positive	Negative
Carefulness	Carelessness
Promptness	Tardiness
Accuracy	Inaccuracy
Cheerfulness	Gloominess
Conscientiousness	Thoughtlessness
Courtesy	Discourtesy

It has been found that, apart from these general characteristics, the majority of boys have some characteristic trend. In other words, a general tendency or an inclination in a particular direction. They are either qualified for work which leads into the clerical or the mechanical field. So strong is the aversion for boys qualified in one field to do the work in the other that their efficiency is greatly impaired. If a boy with the ambition and necessary qualifications to do mechanical work were assigned to a division of the Traffic Department where his efforts would be confined to assorting checks or light filing, his work would never reach the standard he would be able to attain in a field which was in harmony with his natural tendencies. Another method of character analysis was attempted in a certain university in the State of Massachusetts. Time will not permit a detailed description of the vari-

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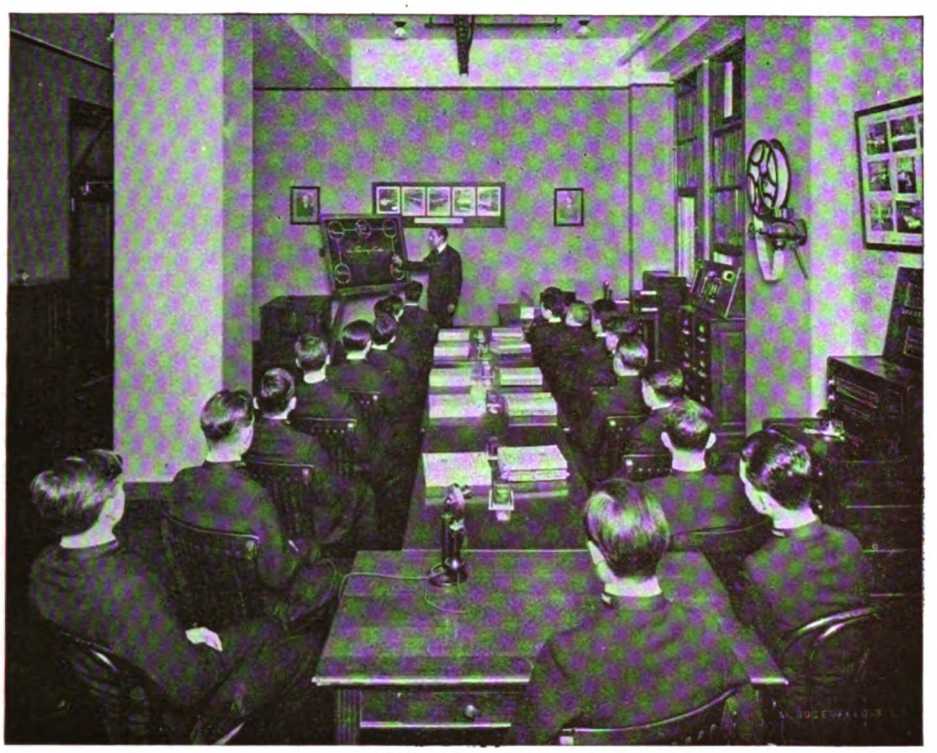


In the Class Room

ous sorts of scientific apparatus which are constructed to record the force of perception, quickness of sight, and accuracy of hearing. It is sufficient to state that the apparatus is expensive and too highly theoretical to be of any practical service, especially in this field of work.

What are the boys taught? The answer to this question involves a discussion of an interesting phase of the work. When a boy is engaged he is immediately sent to an office for experience. Here he receives his first practical insight into office routine. He answers buzzers, delivers mail, stamps envelopes, and does minor clerical work. In the afternoon he attends a course of lectures. The subjects discussed at these lectures can be grouped under the following headings:

1. Principles of Business Success.
2. Organization of the American Telephone and Telegraph and the New York Telephone Companies.
3. Telephone Geography.
4. Routing on Local, Suburban, and Long Distance calls.
5. Construction and operation of a telephone.

Principles of Business Success.

In studying the principles of business success the following topics are discussed: Courtesy, Personal Appearance, Punctuality, Accuracy, Economy, Co-operation, Familiarity, Observation, Attention, Concentration. The value of the principles which underlie these topics is brought out by the illustrations, and instances are quoted which show their practical application to the business.

The following is a brief excerpt taken from the lecture while it was being delivered and illustrates the method by which these topics are defined and illustrated:

Courtesy is not a simple word to define, but if you will think of it as the Golden Rule of Business, the fundamental principles will always reoccur to your mind. In other words, treat others in the same manner that you would have others treat you. Remember, that if a person calls by telephone or in person you may be the first person to make an impression on him and that he is liable to carry this impression, good or bad, away with him even after his business with your employer has been discussed. These impressions are frequently caused by slight attentions or inattentions, those that you would not ordinarily think important enough to consider. For instance, do you always give the person calling all of your attention, do you make him feel through your attitude and manner that you can obtain for him the information which he has requested, is this followed up by a pleasant "Yes, Sir," or "No, Sir," or "Please wait a moment and I will inquire if Mr. Brown is in"? It is precisely these small attentions that are essential and which must be observed in order that you may be considered courteous.

Organization of the American Telephone & Telegraph Company and New York Telephone Company.

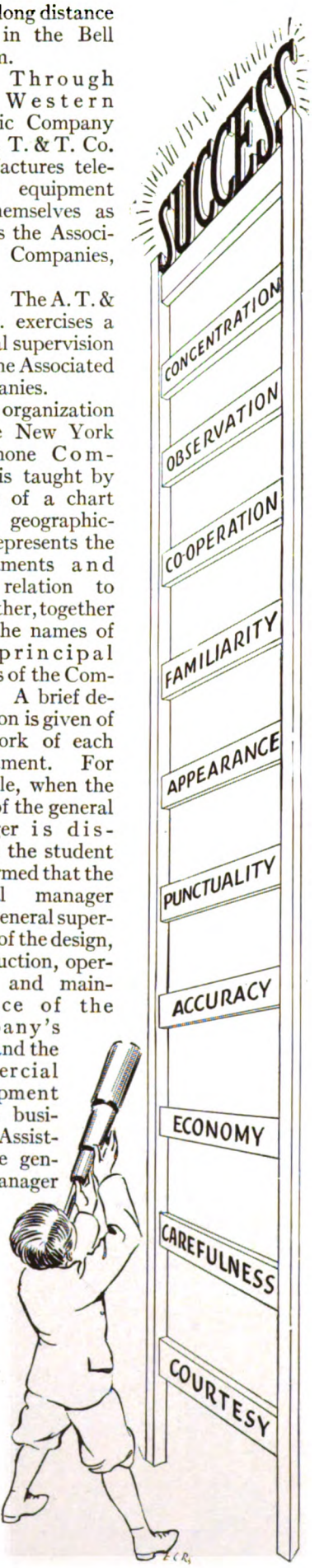
In the lecture on the organization of the New York and its parent company, students are taught by means of a large map of the United States the territory which is operated by the American Telephone & Telegraph Company and the Associated Companies. This is taught by a brief description of the work of the A. T. & T. Co. and the N. Y. T. Co. It is necessary, of course, to eliminate considerable detail in order that the principal function of each company may be thoroughly understood. For example:

(1) The A. T. & T. Co. controls all of the long distance wires in the Bell System.

(2) Through the Western Electric Company the A. T. & T. Co. manufactures telephone equipment for themselves as well as the Associated Companies, and

(3) The A. T. & T. Co. exercises a general supervision over the Associated Companies.

The organization of the New York Telephone Company is taught by means of a chart which geographically represents the departments and their relation to each other, together with the names of the principal officers of the Company. A brief description is given of the work of each department. For example, when the work of the general manager is discussed the student is informed that the general manager has a general supervision of the design, construction, operating, and maintenance of the Company's plant and the commercial development of the business. Assisting the general manager are:



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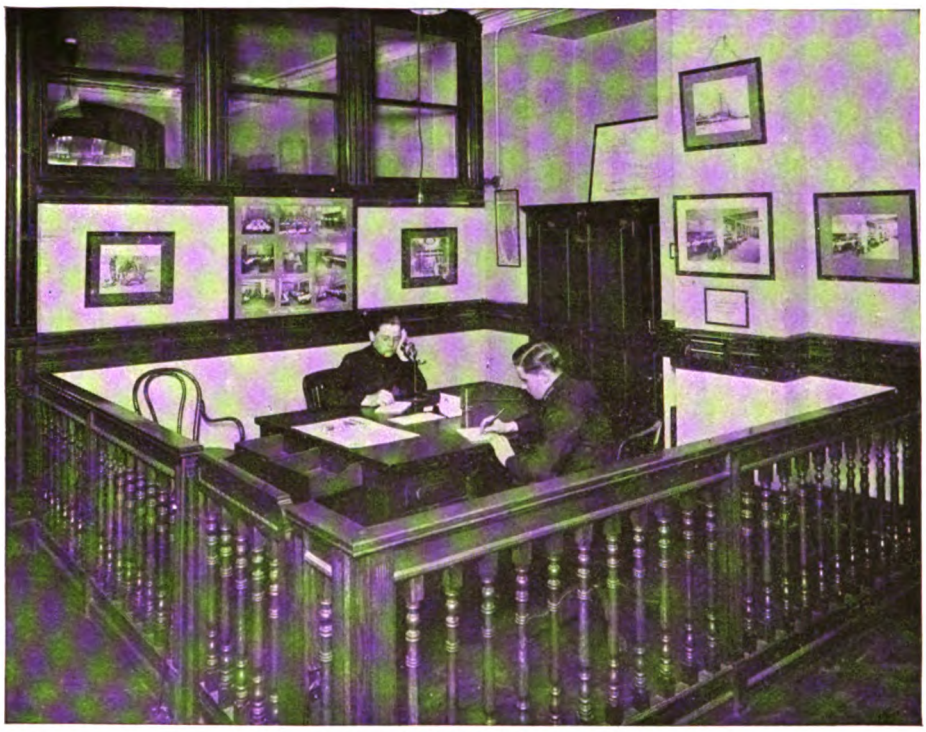


"On the Job"

(1) General Superintendent of Plant.
(2) General Superintendent of Traffic.
(3) General Commercial Superintendent.
(4) Engineer.
(5) Chief Clerk.

In order that the student may grasp the subject more readily it becomes necessary to define the work of these departments in such a way that the brain can thoroughly absorb the facts. Therefore, when a department like the Plant Department is discussed, in addition to the definition of its work as "the supervision over the construction and maintenance of the telephone plant and the furnishing and storing of telephone supplies," the student is instructed to remember this department as the mechanical department, and that everything which pertains to mechanical work falls under the jurisdiction of this department.

In like manner the work of the Traffic Department is defined as "having jurisdiction over the prompt and satisfactory handling of telephone messages, supervising and making tests in order to determine the quality of service, handling complaints and planning any additional equipment which may be necessary to the central office operating." The situation is summed up by the statement that this department handles telephone calls and that everyone who aids in their facilitation is a part of the Traffic Department.

The work of the Commercial Department is defined as having jurisdiction over the handling of telephone contracts, collections, and development work, also advertising and publicity. In addition to this description the Commercial Department is pointed out as being the "business developing and producing end of the Company," and any department which has for its sole object the increasing of the telephone business is part of the Commercial Department.

The method by which these three departments coöperate with each other is brought out by the illustration. For example, if a subscriber wishes a telephone installed he calls the Commercial Department and they arrange for the contract, the Plant Department installs the instrument and the Traffic Department is held responsible for satisfactory handling of the patron's telephone messages.

Telephone Geography.

The student is taught telephone geography by means of a map showing the divisions of the New York Telephone Company. Here may be seen at a glance the territory which is occupied by the Western, Central, Hudson, and Metropolitan Divisions. The different classes of calls such as Local, Two-number toll calls, "particular person" toll calls, and long distance toll calls, as well as free emergency calls, are pointed out. At the conclusion of this lecture the student is furnished with a typewritten list with the names and addresses and how to consult the list and record the telephone numbers. This list is so arranged as to tax the student's knowledge of the directory. City Departments, Maritime Exchange, public schools and various public and private institutions in the suburban territory form a part of this list.

Routing on Local, Suburban, and Long Distance Messages.

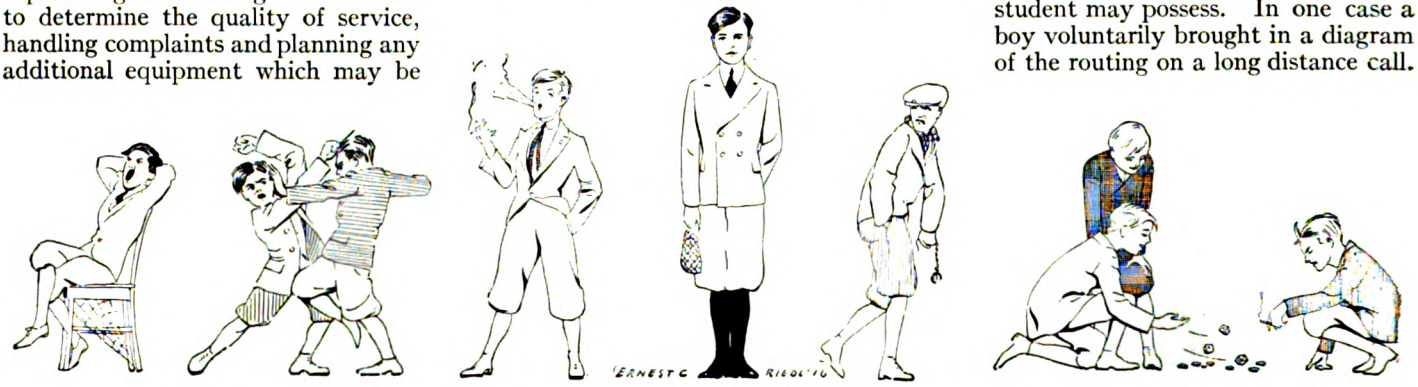
Instruction is given in simple terms on how a telephone call passes from exchange to exchange or city to city. The following diagram will illustrate the method:

The subscriber lifts the receiver at 3000, the Broad outgoing operator answers with the words, "Number, please," and after receiving the desired number from the patron passes it to the incoming operator at River, and River rings 5190. The way in which "cut offs" and "wrong numbers" occur is also explained and the student is taught how to remedy irregularities when they occur.

Construction and Operation of the Telephone.

This is a lecture for which we are in a great measure indebted to the Plant Department. In simple language and without technical terms the leading principles underlying the construction and operation of a simple telephone are taught.

Incidentally to the school course the instructor has an opportunity to observe any special qualifications which the student may possess. In one case a boy voluntarily brought in a diagram of the routing on a long distance call.



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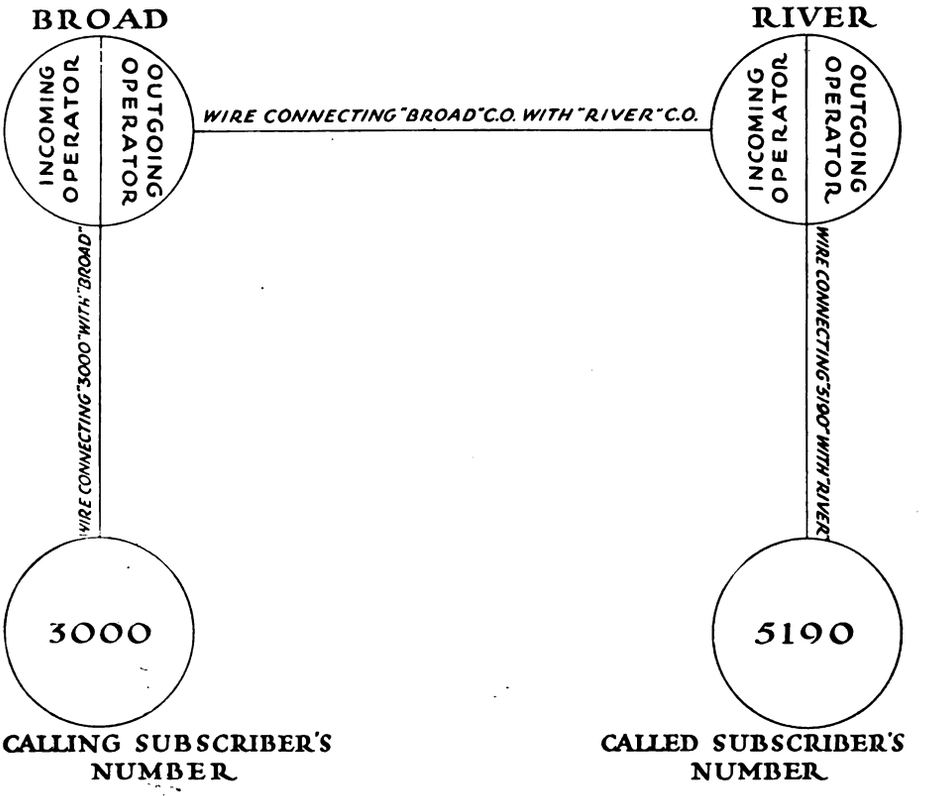
The lecture had made an impression on his mind and he wanted to assure himself that he had received all the details. Apart from being correct as far as detail was concerned, the explanation was printed in letters of the old English type. They were drawn free-hand with such an accurate sense of proportion that only on a careful examination could it be determined they were not stenciled. The boy was complimented on his work, the value of his gift was pointed out, and he was advised where his gift might be developed, free of charge, along scientific lines. A branch of the Engineering Department was later advised of the boy's special qualifications and he was immediately transferred.

In another case a boy evinced a highly developed tendency for mathematics. When the course terminated the boy was questioned. He stated briefly that mathematics had always been his favorite subject at school and that working out problems was in the nature of recreation to him. The instructor quoted a problem of ordinary difficulty, involving simple proportion, and handed the boy a pencil to work it out. The boy looked at the problem for a few moments and said, "Why, Mr. ————, the answer is 346. I don't need a pencil and paper to work that out." Further questioning developed the fact that the boy was mechanically inclined. Outside of elementary schools, his talent had never been recognized. He is now in his third year in one of the evening schools, where engineering is taught, and he occupies a fairly responsible position with the Company.

The boys are encouraged to attend evening schools and the instructor is frequently asked to prepare a schedule of subjects which are most profitable and suitable to their special needs. Every effort is being made to prepare a schedule of subjects for a scientific and practical course. The number of requests for new schedules after the end of the year's work seems to prove satisfactorily that the advice is being followed with a certain degree of profit.

A highly encouraging feature of the work is the interest manifested by the parents of the boys. Many have called to inquire as to the progress their boys are making, and evince an eagerness to coöperate. This coöperation of the parents on one hand and the Company on the other is one of the most desirable features which the establishment of a Central Employment Bureau and Training School has brought with it. In this way a closer contact is established at a time when it is most needed, and has proved itself a material advantage to the parent as well as to the Company.

Thus the Company is teaching its boys to understand the *background* of their work, is giving them a chance to develop their abilities and showing them how to use and apply those abilities—in a word, is giving its boys a start.



Urgent

"Can you wait on me immediately?" demanded the richly dressed woman. "I'm in a great hurry."

"Yes. Let me have your prescription," said the busy druggist.

"I have no prescription. I want you to look up a number for me in the telephone book."—*Globe, N. Y.*

As They Grow in Bushwick

A VERY particular subscriber in Bushwick the other day called the "Manager" about two-thirty in the afternoon, and Bushwick was steeled for a complaint. The "complaint" as described by Miss E. M. Walsh, chief operator, was this:

"You can imagine how glad we were when the Manager referred the complaint to me thus: 'Mr. ——— has called sixty numbers in succession so far, and has received every one promptly and O. K., so thought he would like to let us know about it.'"

Sixty calls in rapid succession, without a hitch, and appreciative recognition of it from a subscriber not easily pleased—a "complaint" upon which Miss Walsh and Bushwick have the congratulations of us all!

"Central," called a scared voice, "send someone out here right away. There is a crazy man on top of a pole in front of my house. He's screaming into a cigar box and he keeps calling you."—*Southwestern Telephone News.*

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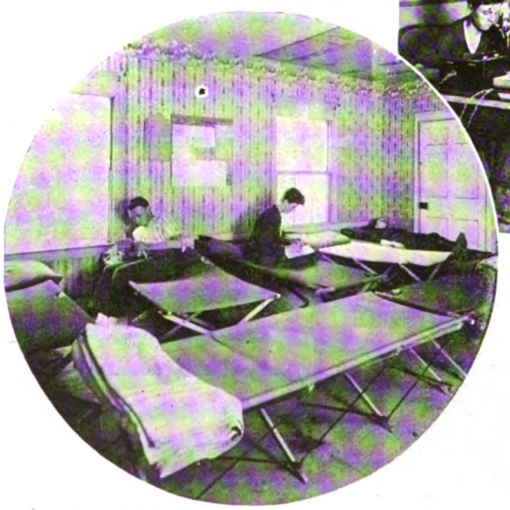
P. H. Fay, P. B. X. Inspector, Hudson Division and First Chief Operator at Central Office Standing at Entrance of Tent Assigned by N. G. as Temporary Sleeping Quarters.

N. G. Headquarters Building. Telephone Central Office and Permanent Quarters of Telephone Operators also in This Building

Telephone Central Office. One Switchboard after Another Was Installed as Traffic Increased, Until There Were Five Positions. Wooden Boxes and Other "Furniture" Pressed into Service.

The Telephone Company's Central Office Operators Lined up for Our Readers' "Inspection."

Coin Box Public Telephones in Headquarters



Sleeping Quarters of Telephone Operators

N. Y. Telephone Company's Construction Car and Group of Plant Employees Who Equipped Camp Whitman with Universal Bell Telephone Service.

At Camp Whitman

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Equipping State Camps With Telephones

How the New York Telephone Company Was Prepared

Installer Thompson

IN Camp Whitman, Van Cortlandt Park, and at Sea Girt, the New York Telephone Company had special telephone equipment installed within a few hours after the order for the mobilization of troops was signed in Washington, realizing its importance and without waiting for any request. The story of how this was done and of some of the uses that were made of it are told in the following article.

THE encampment at Van Cortlandt Park presented a three-fold problem, as there were three fairly distinct camps: The 1st Field Artillery at the northwest end of the park, the 2d Field Artillery camped at the lower end, near 245th street, and the cavalry on the east side. There were no buildings in the park in which it was possible to install public telephones, but some booths which had been used along the river front during naval parades were immediately available and these were set up in the open field at Van Cortlandt. Three of them were assigned to the camp of the 1st Field Artillery, but the demand for telephone service was so great that the next day, when the regimental adjutant moved from his tent just next to the booths to a larger one, his consent was readily obtained to install additional coin boxes in the tent he vacated. Accordingly, five more coin boxes were added to the accommodations for this regiment. These eight instruments, working through the Kingsbridge office, were kept in steady use, and raised the traffic load at Kingsbridge to a point higher than at any previous time in the history of the office.

At the camp of the 2d Field Artillery two booths were installed. The chaplain, observing the number of soldiers waiting for a chance at the two coveted instruments, and the blaze of sun which made things warm (-er!), hunted up part of a tent and had it set up in front of the booths. No sooner was the tent in place than four more public telephones were installed in it, on boards, and later two more were added, making a battery of eight instruments.

Four public telephones were originally installed for the 1st Cavalry, but these soon appeared to be insufficient, so five more were added. No tents could be obtained from the Quartermaster's department, as there were none to spare, so our Plant Department secured a 14 by 16 foot tent and placed it in the park between the camp of Squadron A and the 1st Cavalry, just across the road from the up-State troopers. The nine stations thus made available to the cavalry were in constant service, usually with a line of troopers waiting for the word of the public telephone attendant to "advance."

To provide facilities for this sudden and swift development at Van Cortlandt Park, fifteen additional lines were run into the Fordham central office.

From the time the installation of the first instruments was complete, the telephones were almost constantly in use. For fourteen hours two of the coin boxes were literally in continuous service. There was always a number of guardsmen waiting to use the telephones, and the receivers were passed from one to another. The first man when he was through flashed the "A" operator and gave her the number desired by the second, so that no time was wasted.

Looking East from Officers' Quarters, Camp Whitman

The customary "Blue Bell" public telephone signs were displayed at each of the telephone headquarters, but in truth no advertising was needed.

THE equipment at the Sea Girt Camp was, before the mobilization, an individual line in the Governor's summer cottage, a four-party line in the quartermaster's office, and an individual coin box in the officers' club. As soon as the call for the mobilization came on June 19, Adjutant-General W. F. Sadler was called on the telephone at Trenton, and orders were obtained to supersede the four-party line of the quartermaster to an individual line and auxiliary, and to place a four-party line in the Commissary Department. Further orders were impossible until the arrival of the officers on June 20. To prepare for emergency, however, three coin boxes with booths were placed in the officers' mess hall.

On June 20, after a conference between our Commercial Department and the military authorities, the work of equipping the camp with the telephone facilities it would so soon and so urgently need was launched in earnest. A forty-line switchboard was ordered to be placed centrally in the field, with 10 trunks and 11

Major (Now Lieutenant Colonel) Taylor, Tenth Regiment, and Staff Using Telephone Facilities Provided Within Half an Hour After Reaching Camp Whitman

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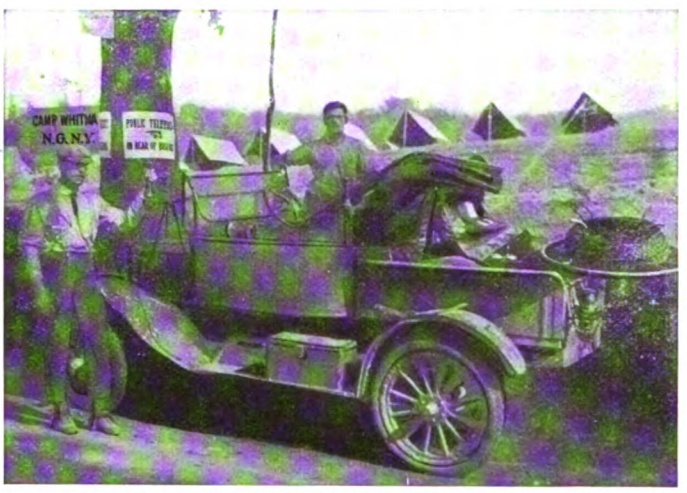
extensions—8 in booths at the board, 1 at headquarters, and 2 at the cavalry camp on the Buckelew Farm, two miles away. No magneto type switchboard was available in the vicinity, so word was immediately telephoned to Mr. Arthur, chief clerk of the district superintendent of plant at Newark, who made arrangements for a switchboard of the type needed to be shipped from Perth Amboy. Lewis Richards was detailed to crate the board and accompany it on the train to see that there was no delay at transfer points, and as a result, it arrived safely at the camp at 2.30 on the afternoon of the twenty-first. Meanwhile, as there was no building available, temporary wooden booths and platform had been constructed under a tent. As fast as the booths were completed, Installers Burns, Krantz, R. Hansen, H. Hansen, Morrisey and Yantz placed the instruments, and on its arrival the switchboard was established in the tent. In addition to the equipment working through the switchboard, coin boxes were installed at headquarters, at the cavalry camp, and at the rifle range headquarters, a line was run to the Surgeon-General's headquarters, and two lines to the Quartermaster's Department. Still further facilities were found necessary and individual lines were run to the 1st Brigade Headquarters, to the Property Department, to the U. S. A. Mustering Officer, and to the U. S. A. Mobilization Officer, and the four-party line to the Commissary was changed to an individual line and auxiliary.



Installation Foreman Ben Smith on the job at Camp Headquarters on the Hill

All incoming calls for the State Camp Grounds were placed on the switchboard, and orderlies were assigned from the various regiments to page the men called, but it was soon found necessary, in order to reduce the time spent thus in paging, to install extensions in the headquarters of two of the regiments and at the field hospital.

By June 24 traffic was increasing so rapidly that a second board was ordered, with 10 trunks and 20 stations. The order was given to Mr. G. I. Flynn, of the Division Supervisor of Supplies office, at 6 P.M. on the twenty-fourth, and by 2 P.M. of the twenty-fifth the board was in Sea Girt and was cut into service that night. Installers Krantz, Clifford and Burns worked all night to have the board in complete readiness before the rush of the morning. While the work was being done word came that the 1st Regiment was to leave for the border the next morning, and there was a rush to the telephones. Because of the heavy traffic it was impossible to work on the new board till after 12.30 midnight, but every line was working through the new board at 6 A.M.

The enormous increase in local and toll traffic, during the entire period of mobilization, was handled by the operating force with the greatest credit. On the busiest day the number of calls handled exceeded the number handled on the busiest day of the 1915 season by about 70 per cent. The increase in the O.K. Jersey Toll board traffic was 25 per cent. But it was the Newark Toll board traffic that felt the greatest increase, as might be expected, since the encampment was entirely of Jersey militia, and the men had been called from their homes so suddenly that the telephone was their only recourse in arranging their affairs for a long absence. The O.K. Newark Toll board traffic increased over 600 per cent. at the hands of the guardsmen.

Running the "Coppers" from Camp Whitman for the Direct New York Circuits

The Spring Lake office, through which the encampment calls were handled, increased its operating force 50 per cent., reserves being called in from near-by offices and others in the division.

The Plant Department, too, did splendid work in executing the "red flag" orders received from the Commercial. A new 26-pair terminal had to be cut into provide for the large number of new connections ordered on the twentieth. The order to cut in the terminal was issued by Engineer H. C. Barnes at 5 P.M., June 20, and at 4 P.M. the next day the terminal was in working order. The splicing was done by A. Frame.

Later, when the new terminal became congested, it was necessary to cut in two more 26-pair terminals, one at the Camp Grounds and one at Manasquan on the road leading to the Buckelew Farm. These were working at 3 P.M. and 2.30 P.M. respectively, on June 24, the very day on which it was found they would be needed. A. Frame and F. De Hart did the splicing.

Eight 35-foot poles had to be erected to connect the instruments at the Buckelew Farm. Foreman Weir, with linemen J. Johnson, W. Johnson, Taylor, Norcross, Bailey and Morey, and Foreman I. W. Bronson, with linemen Burleigh, Herbert, Cummings and Truax were on this job. Every day from the twentieth to the twenty-sixth new installations had to be made, temporary circuits of twisted pair run, and replaced, when conditions were settled, by permanent circuits,

Group of Enlisted Telephone Men from New York and Albany at Camp Whitman. These men were constant visitors at the Central Office and rendered efficient aid about the camp in getting the calls through

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transfers made, special crossarms placed or other work done to maintain the highest possible degree of telephone facility for the camp.

On June 26, because of camp conditions, orders were received to move all telephones about 200 feet west. This made it necessary to erect two 35-foot poles and extend all circuits two sections. The poles were set and wire extended and two extensions which had been ordered were about two-thirds completed when the order came for the troops to entrain—and the rush was over.

The total number of lines connected was 38, of stations 40, and of stations moved to other locations, 4. Supervising Foreman Allen was in charge of all wire and pole construction, and Installers Foreman Van Brunt of all instrument and switchboard installations. At the office end Miss Moore, stenographer, and Plant Order Clerk Pfister rushed through the red flag orders with all possible haste. It was this thoroughgoing coöperation on the part of every one concerned in the work, as well as the organization behind which made it possible, that made the telephone at Sea Girt an example of efficiency and preparedness.

CAMP WHITMAN presented the most difficult problem from a telephone standpoint, as it was situated far out in the country, on a single track branch railroad having one or two trains a day, and the nearest plant gangs were from ten to forty miles from the camp.

On June 19 orders were given to hurry the work of installing at Camp Whitman a one-position switchboard, with 5 trunks and 9 stations, the trunks to connect with Beacon, Poughkeepsie, Pawling, and Hopewell. Foremen A. Burton, F. Laird, A. Many, and T. Tinney, with forty men, were brought to near-by towns in automobile trucks so that they could start work at daylight the next day. General Foreman J. E. Dunn conferred with the foremen at 10 P.M., and then went to Beacon where at 11.30 wire that had been rushed from New York arrived and was started toward the camp.

The nearest line of the New York Telephone Company was five miles from the camp, and at this point only two circuits could be used. Additional circuits were available on another line eight miles distant. Two hundred crossarms and seventy-five miles of wire had to be placed on the poles of the East Fishkill (Connecting) Telephone Company to complete the five trunks, and their line had to be strengthened by placing thirty poles at road crossings and fifty heavier guy wires to carry the additional load.

Within twenty-four hours after the first order was given to hurry the work the switchboard was installed, two trunks connected and one station at the Officers' Headquarters installed—the only station the military authorities were ready to have located that day.

On June 21 Foreman Burton's gang of nine men ran thirty-five miles of wire. The other three trunks were completed now, and District Wire Chief McCord and Installation Foreman B. Smith had three public telephones installed at the headquarters building and two positions added to the switchboard. The five trunks were rapidly proving insufficient for the business to be handled, so it was decided to run three circuits to New York direct, one to Albany, and two to Poughkeepsie. This necessitated building three-quarters of a mile of line from the camp to the railroad where a crossarm was attached and eight wires were run four miles to the A. T. & T. Co.'s New York-Buffalo line. Twenty-five

J. A. Jamison, Jr., Div. General Manager, Albany, at left talking to G. C. Donnelly, Chief Clerk Traffic Department, Hudson Division, Facing Reader, and Other Guardsmen at Camp Whitman

telephones were now working in the camp. Another feature of this day was the arrival of a five-ton Pierce-Arrow truck from New York with forty miles of copper wire and other material.

The men worked in the rain all day on the twenty-second, placing crossarms and running wire along the railroad. A Ford car was sent to the men's homes in Poughkeepsie, Kingston, and Newburgh to collect dry clothes, and the men were taken to the camp that night. The kitchen of the house where they stayed looked like a Chinese laundry with the clothes of the men hanging in every nook and corner and a man standing guard to keep the fire going all night.

When Colonel Lucas and Colonel Townsend, the officers in charge, were asked by the telephone men for lumber and a place to park the Company's cars, they were both very high in praise of the work done by the telephone people. Colonel Townsend told Mr. Greenleaf, District Plant Superintendent, that the work the telephone men had done showed the result of a most remarkable organization. "Whenever we sent to them for a favor," said Mr. Greenleaf, "it was granted freely and usually with a compliment, such as, 'The work you have done entitles you to ask for anything we have to give.' "

At noon on June 23 the additional trunks between the camp and New York, Albany, and Poughkeepsie were completed, making one trunk for every two and a half stations. The newspaper men were using the service extensively and the troops were expecting to go to the border at any moment, and were eager for a last word with their homes.

On the twenty-third, also, the fifth day after the first hurry call for telephones had been given, the post office was opened.

Two more switchboard positions were added, and on the last day of June 32 stations were working through a 5-position switchboard, over 13 trunks, and 200 miles of wire, 400 crossarms, and 50 poles had been placed.

The camp central office was moved three times, owing to the uncertainty of the camp authorities as to what disposition they would make of the various buildings on the State land, and the fact that the first places allotted to the telephone office proved too small for the amount of business they were doing.

The ultimate headquarters of the telephone were—and are—in a large farmhouse opposite the military headquarters. Four rooms are occupied by the Company, one an operating room, one a large dormitory, and two small sleeping rooms. These the operators "staked claim" to on their first tour of the building, and permission was obtained from Lieutenant Colonel Townsend, Camp Quartermaster, to occupy them.

At first there were two operators under P. B. X. Inspector P. H. Fay, of Albany, in charge of the one position switchboard and two trunk lines. These were the facilities the authorities planned for the regular summer encampment. But when the proposition of furnishing adequate telephone service for the concentration camp became apparent in its true proportions, the Public Telephone Department in New York was called on for attendants, and for a week there was a man arriving every day to keep up with the traffic as it increased.

On some days there were about three hundred O.K. "out" calls handled on the five positions of the magneto switchboard. The newspaper men were clamoring for the wires; there were constant rumors regarding the movement of certain regiments to the border, and the troops tried all at once to talk with

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their homes; the authorities, especially the Commissary Department, kept the wires hot in their efforts to get in enough supplies to feed the vast army which kept arriving, regiment after regiment, until there were 15,000 men in camp; there was constant calling for horses, guns, and clothing. Even recruiting was done over the telephone, captains calling their home towns in the effort to bring their companies up to full strength.

Personal calls were difficult, as it was hard to locate the men in the camp, as they were kept busy on sentry duty and special details, and even when they made calls themselves they frequently had to abandon them to return to duty. Military business was put through with practically no delay. All night service was rendered, each boy taking his turn. A number of telephone men were members of the Guard and rendered considerable assistance to operators in locating men in the various regiments.

When the 2d Regiment left Camp Whitman, Lieut. Col. W. A. Taylor (of the Albany Plant Department) and two orderlies arrived at the telephone central office, carrying with them the telephone instrument and loop wire, installed by the Telephone Company for service, and presented the operators with a box of cigars, shaking hands all around.

Colonel Lucas, who was Post Commander while in camp, visited the central office just before he left camp, to thank the operators personally for the service they had rendered. He was very enthusiastic about the preparedness displayed by the Telephone Company in setting up telephone equipment as it was needed and giving service which he said was equal to that in any city.

The inter-departmental coöperation was marked from the beginning. The Traffic Department in its account of the experience says: "The Traffic Department feels that great credit is due to the Plant Department for its cooperation with us. As soon as anything was required, all we had to do was ask for it, and it was there with as little delay as possible." As the regiments marched by on the road to camp contracts were signed with the quartermasters and telephone service was installed before a camp had been made. This was followed up by the Commercial Department, who made the proper contracts.

Red tape was absolutely eliminated. There was no distinction between departments. It was a case of working only for the Telephone Company. Never was a job pulled off with less friction and delay.

The Voice With the Smile Wins

Miss Ella A. Logan, "Chase" Chief Operator, Rochester, and Her First Prize Automobile

MISS ELLA A. LOGAN, chief operator of the Chase central office, Rochester, has been awarded first prize—a Hudson Super-Six touring car—in a contest held by the Rochester *Herald*.

The car was offered by the Rochester *Herald* as a prize to the one securing the greatest number of votes in a popularity contest. Miss Logan had 819,460 votes, while her nearest competitor had 378,241 votes.

Miss Logan attributes her success in the contest to the large number of friends she has made by following the New York Telephone Company's motto, "The Voice with the Smile Wins."

Referring to Miss Logan's success, the *Herald* said:

"VOICE WITH THE SMILE"

Miss Logan is chief operator of the Bell Telephone Chase Exchange. She attributes her success in the *Herald* contest directly to her telephone training. For some time, by instructions and placards, the Bell Company has impressed its employees with the slogan, "The Voice with the Smile Wins." So constantly has Miss Logan lived up to the principle of the card that hangs over her desk that when she determined to go after one of the *Herald's* big prizes, she says she took the telephone motto for her own.

When she had decided to enter the contest she lost no time in making a start. Being a telephone woman, she started her canvass over the wires. "The Voice with the Smile Wins" hung over the 'phone, and when she called her first prospective customer, it was with a voice with a smile in it. The customer became a subscriber, and Miss Logan became firmly convinced that her motto was an excellent one. Throughout her long and arduous campaigns she never forgot to smile—and, behold! now she has an automobile. Who says it doesn't pay to smile?

Publicity Value of Selling by Long Distance Telephone

SELLING 2,000 barrels of flour in five minutes, by telephone, from Arkadelphia, Ark., to New York City, just before the time for letting the contract expired, is the record of the Arkadelphia Milling Company, described in THE TELEPHONE REVIEW for May-June, 1915. The incident was remarkable only because it intensified the everyday use of the long distance telephone—showing a particularly large transaction, over a particularly long distance in an almost miraculously short time. For this reason it was made the subject of an advertisement in the New York papers and proofs were sent to the Milling Company.

The District Commercial Manager, of the Southwestern Telephone and Telegraph Company, in Little Rock, forwards this interesting letter from the Arkadelphia Milling Company:

Mr. C. Stout, District Commercial Manager, The Southwestern Telephone and Telegraph Company, Little Rock, Ark.

DEAR SIR: The posters showing the sale of 2,000 barrels of flour over the telephone from Arkadelphia to New York that you kindly furnished us some time ago, we have had framed, and have placed them in the offices of our leading brokers over the country; we have also had one of these placed in our office.

You will remember that this was an unusual sale, made in a remarkably short time over long distance telephone. We got the connection, and made the sale in less than five minutes from the time we put in the call. We had a nice profit in this sale, of course, but the enormous advertisement in the publicity we have received by getting this business over long distance telephone has amounted to a great deal more to us than the original sale, and we feel sure that both the Arkadelphia Milling Company and the Bell Telephone Company have received an enormous amount of advertising from the publicity of this transaction.

With kindest personal regards, we are,

Yours very truly,

(Signed) ARKADELPHIA MILLING COMPANY,
W. N. ADAMS, *Manager*.

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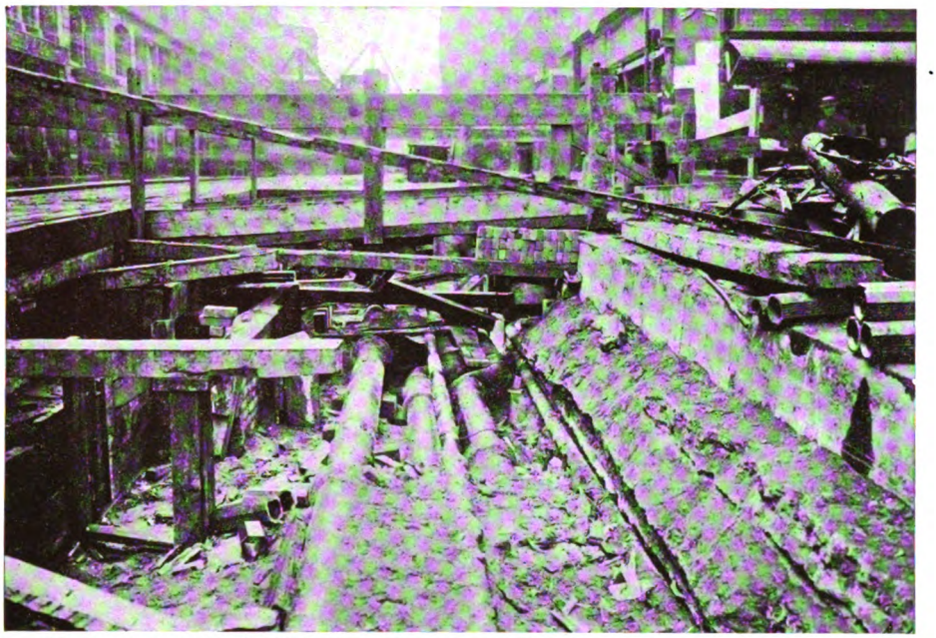
Electrical Subway Problems Raised by Rapid Transit Subway Construction in New York City

Part 2 (Part 1 appeared in May, 1916)

By Clifford M. Hartley, Assistant Engineer, Empire City Subway Company

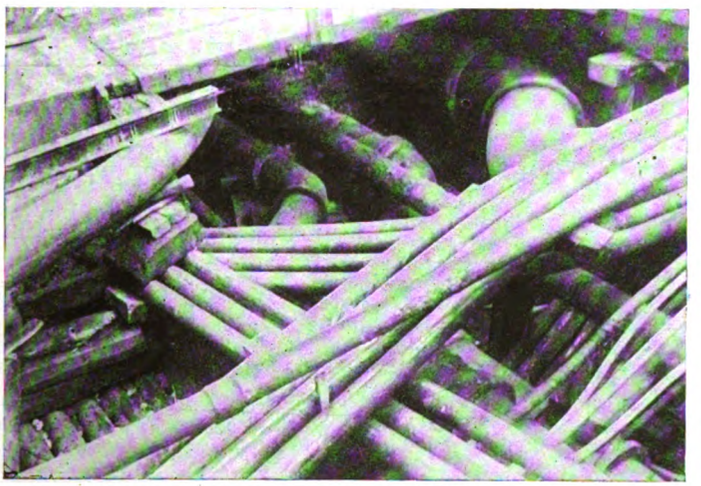
WE have shown, in the foregoing pages, the development of subway construction from an infant industry to one which, in this city, at least, reaches large proportions. We have mentioned, too, the difficulties which beset the paths of the pioneers who blazed the trails that, in after years, were to become broad highways in the city's traffic. Their way was rough, their trials were many. Without moralizing, it may be pertinent to remark that they "have nothing on us." Times have changed, and the nature of the problems presented to the engineers now engaged in electrical subway construction is vastly different from those of twenty-five years ago. The one greatest and ever-present problem is that furnished through the construction of the rapid transit subways.

Of the millions who daily walk the streets of New York, there can be but a very, very few (outside of those who are actually engaged in the work) who comprehend at all fully the conditions existing beneath the streets under which are being constructed the new rapid transit subways. True, this work, its magnitude, importance, and various other interesting features in connection with it, are given space and consideration in the newspapers. So is the present world-war in Europe. And yet, how many of us—aside from those who have been there, and have seen with their own eyes the terrible results of this struggle—how many of us have any conception of the actual conditions existing there?

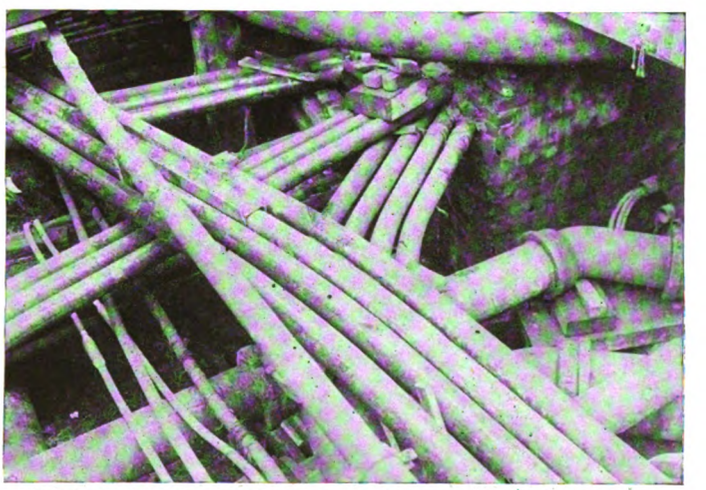


Northwest Corner Broadway and Houston Street. Looking South from North of Houston Street

We do not mean, by this, to compare the operations incident to rapid transit construction to warfare, though the analogy *might* be carried out along those lines. Rather do we wish to emphasize the fact that right here in the city of New York there is being carried on a work, the importance of which, to the city itself, as well as to hundreds of thousands outside the city, can hardly be expressed in cold type. That work is the maintenance of a part of the most used, and the most important telephone plant in all the world—namely, the cables of the New York Telephone Company, as well as cables belonging to the telegraph companies, the various city departments, and all other companies using low tension electrical circuits—and the restoration of the structures



Southeast Corner Broadway and Pearl Street During Rapid Transit Subway Construction. Looking Southwest, Showing Three Banks of Empire City Subway Ducts Entering Manhole, and Also General Conditions.



Southeast Corner Broadway and Pearl Street During Rapid Transit Subway Construction. Looking Southeast, Showing Four Banks of Empire City Subway Ducts Entering the Manhole at the Southeast Corner.

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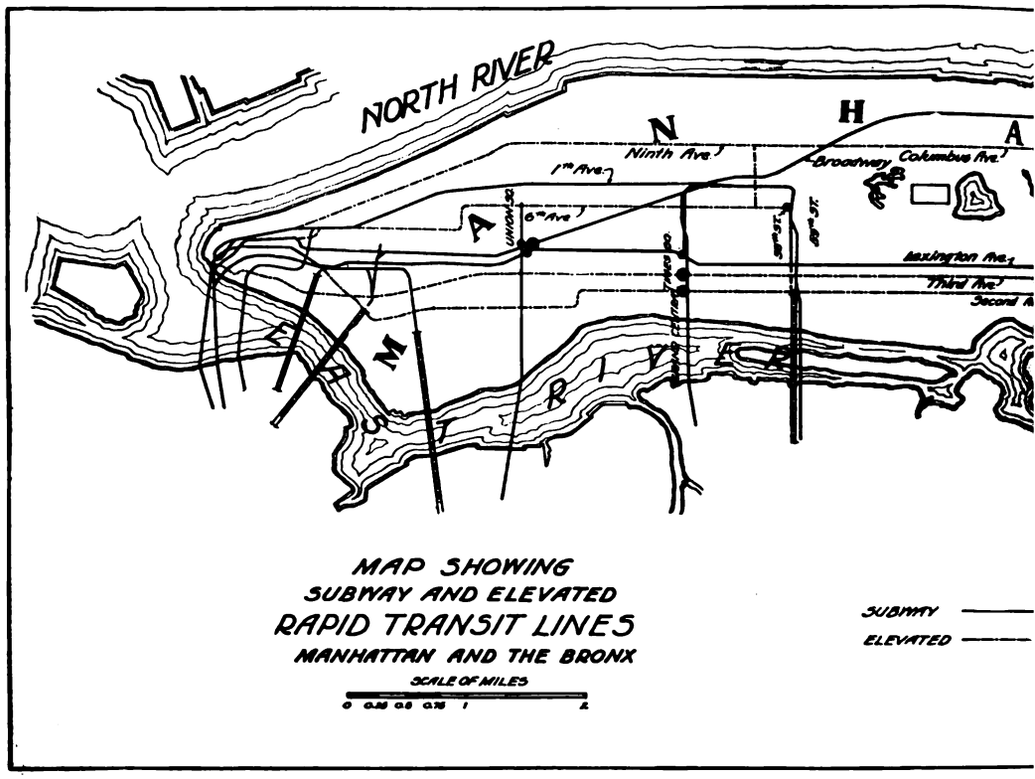
containing these cables, upon the completion of the rapid transit lines.

Some specific instances of this work have been brought out in these pages before, but it is our hope that we may now be able to present the subject more or less in its entirety, that the reader may grasp the significance of the far-reaching and vital importance and interest of this particular phase of subway construction.

As may be seen from the plan (Fig. 4) the rapid transit subway lines, both old and new, follow, in the main, the principal north and south thoroughfares. Further, they are built so close to the surface as to practically divide the city into a number of longitudinal zones. It is but natural, owing to the topography of the island of Manhattan, that the trunk lines of the public utilities companies should also follow much the same routes. There are, at the same time, trunks running east and west, which but further complicate the situation, as they must cross the rapid transit subway structure at certain points, and these crossings involve exceedingly difficult construction features. They are so difficult, in fact, that subsequent connections between these zones will be impossible. An indication of the great magnitude of the rapid transit work may be had from the fact that the total cost of the subway lines, old and new, will be approximately $366,000,000.

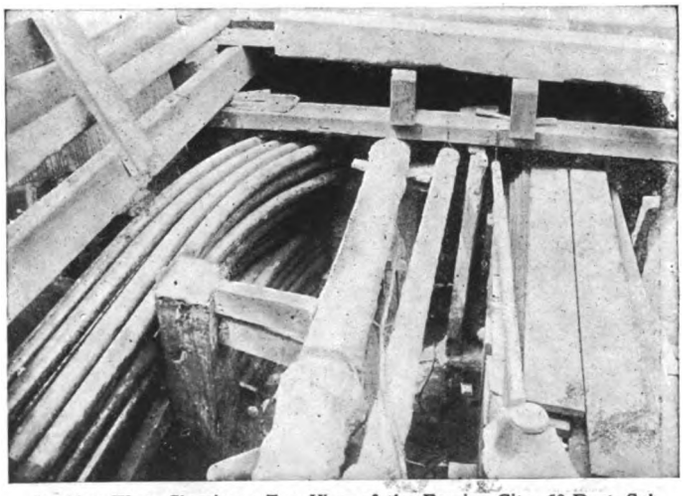
Profiting by the lessons learned and the experience gained in the building of the existing subway lines, a Bureau of Subsurface Structures was formed at the commencement of the present work to carry on the planning and execution of the work of restoration of subsurface structures. This Bureau, consisting of some seventy men, is a part of the Engineering Department of the Public Service Commission. Its function is primarily that of recording the existing subsurface conditions when the streets are opened, preparing the necessary plans for the restoration of the structures disturbed, and supervising such restoration.



The preparation of these plans may be likened to the merry game of chess. Before us, as on a board, we have a certain section of street, filled with the various pipes, conduits, etc., of the public service companies. Each structure has its own moves. One may be moved in a certain direction, when it is found to be blocked by another. This one is then moved, and in turn may block, or may be blocked, by a third. And so on. Be it said to their credit, however, that the engineers on this work have never yet been checkmated.

Let us follow out the mode of procedure in a typical case. A section of street is opened. As soon as practicable, the field engineers of the Public Service Commission locate all the subsurface structures in the cut, and these locations are then platted up, and from the plan thus made is prepared a restoration drawing. Advance prints of this drawing are sent to the interested companies for their suggestion and criticism. They are given ten days in which to submit any changes they may wish made. If none are suggested, approved prints are issued, and the work proceeds. If changes are desired, within the legal responsibility of the Commission, the advanced prints are altered to conform to these changes, and approved prints are issued, as before. In the restoration of all structures disturbed by the rapid transit operations, the law requires that the same service be provided for as originally existed. Then, too, the contract drawn by the Public Service Commission provides that the owners of the utilities may take advantage of the opportunities offered, to prepare for future needs by making enlargements of, and additions to, their present plant.

One of the most important phases of this work is the maintenance and protection of the exposed cables. When a street is being excavated, the car tracks, decking, and subsurface structures are all carried by timbering erected on the sides and bottom of the cut. This timbering is built to a prearranged plan, and this plan must be adhered to, in order to bring about the correct spacing in regard to the steelwork erected later. Consequently, the fact that in many instances a timber or bent will come right in the center of a manhole offers no alternative but that the manhole shall suffer. The ducts are generally removed from the cables, which are then protected by a wooden covering, where possible. The design of the tunnel, and the elevation of the tunnel roof, are such that generally the greatest mass of timbering comes right among the cables, making the task of maintenance a very difficult one.



Looking West, Showing a Top View of the Empire City 60-Duct Subway Starting to Fan Out, 36 Ducts to Enter the Empire City Manhole on South Side Lispenard Street, West of West Curb of Broadway, and 24 Ducts Passing North of Manhole to a Dead End.

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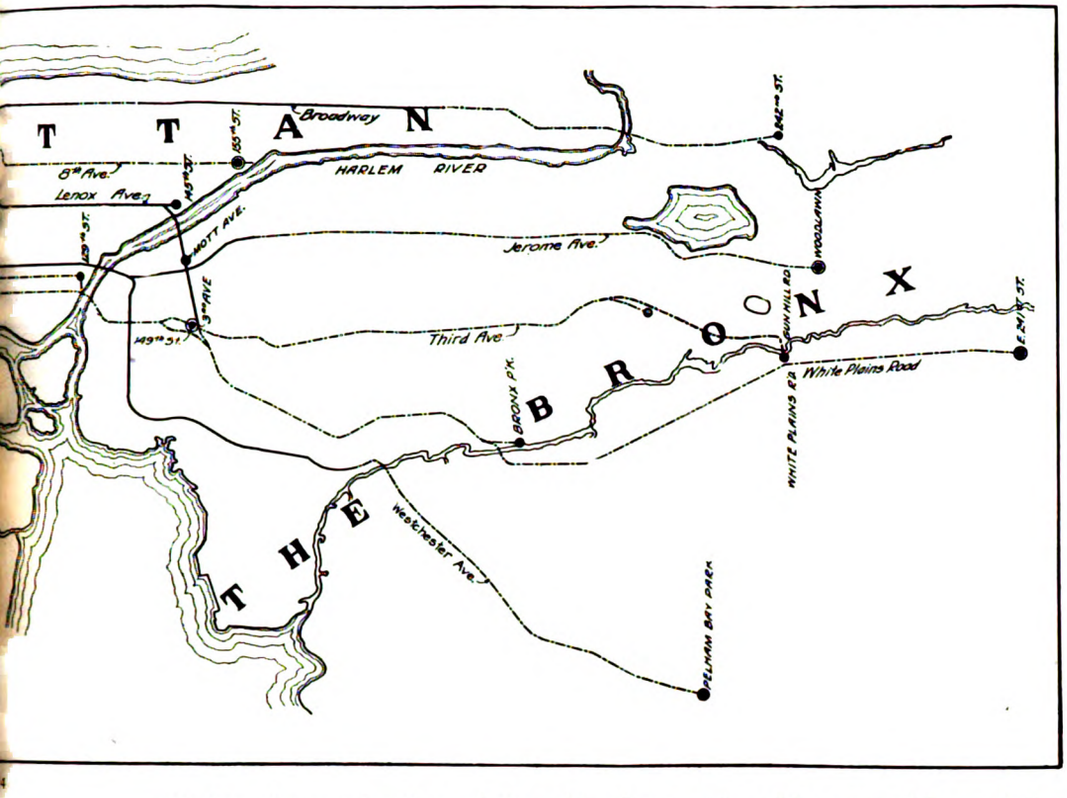


During the construction of the old rapid transit system there were 7.8 miles of subway and 53.7 miles of cable exposed; and on the present work, to date there have been 20 miles of subway and approximately 205 miles of cable exposed and under inspection. One mile of this construction had been closed in prior to 1915, but during this entire year there were 21 miles of subway and approximately 196 miles of cable exposed, and consequently, under inspection, as well as 313 manholes. These figures are large, and bring before us most graphically the extent of this work. In the course of the year there were reported 1,229 cable damages on rapid transit, classified as follows: 777 in manholes, 16 at building entrances, 360 in boxed-in section, or where supported along the line of the work, and 76 in wrought iron pipe. Comparatively few of these damages were what might be called serious. There were during the year, as will be recalled, three disasters along the line of rapid transit construction: Namely, the fire at Seventh avenue and 43d street, and the cave-ins at Seventh avenue and 24th street, and Broadway and 38th street. They were described in THE TELEPHONE REVIEW of April, 1915, and November, 1915. The first was the most disastrous from the point of view of the telephone interests involved. At the same time, these accidents, while occurring on rapid transit work, and causing cable damages, should be differentiated from those arising directly from the subway construction operations, such as the puncturing of a wrought iron pipe and the inclosed cable, and minor damages to cables exposed in manholes and along the line of subway work.

The performance of this work of maintenance and restoration is in the hands of the rapid transit contractor. It is a part of his contract to take care of the existing structures in the street, and to restore them, upon the completion of the tunnel, to a condition which will permit of their giving the same service as originally. On the whole, there is a pretty thorough appreciation of the necessity of carefully guarding these interests, and a disposition on the part of the contractors to coöperate with us in maintaining service.

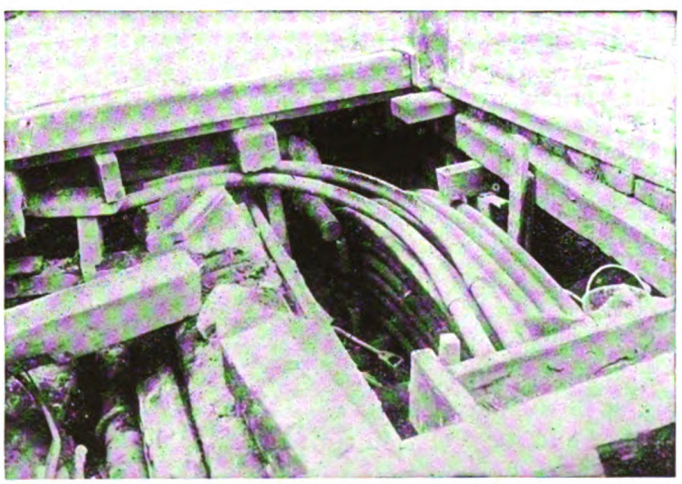
It being a part of the rapid transit contracts to make restoration of subsurface structures, this is of course done at the expense of the contractor—provided, however, that the restoration is to include no additions to the existing plant. When it is deemed expedient to make such additions, to provide for future expansion, it must be at the owner's expense. It is frequently desired, for instance, to enlarge a manhole. This usually involves the relocation of one or more contiguous subsurface structures. At the same time, it might happen that the owners of these structures also wished to make a change at this particular location, in which event the situation would tend to become extremely involved, to say the least.

As mentioned before, the rapid transit routes are all along trunk lines of subways. The existing lines are heavy, and in planning for enlargements, the electrical companies generally provide, as far as possible, for their future needs. This is not only a far-sighted policy, but, under the circumstances, an absolute *necessity*. It is even difficult to get in, in many cases, while the rapid transit work is going on; but it would be practically impossible to come back later and try to enlarge some of the lines. Certain locations where this is manifest even to the layman will be described later on.

If the original layout of the subsurface structures had possessed any semblance of order, the problems presented now would not be so complicated. However, in common with those of other American cities, the streets of New York are filled with pipes laid in a most haphazard manner, and any scheme for restoration involves also the necessity of trying to bring order out of chaos.

Standardization of design and of methods of construction is sought by this Company, and, in the interests of efficiency, is followed wherever possible. However, when we undertake this rapid transit work, it is impossible to adhere to these standards, in the majority of cases. Almost every intersection calls for some special design, governed by local conditions, and, for instance, there are few standard manholes along the line of rapid transit work. The theoretical routing of cables, however, is provided for in actual construction, except in cases where the conditions in the field make it impossible to do so.

As in standard electrical subway construction, most of this work is built with vitrified clay conduit. However, a large



Northeast Corner Broadway and Howard Street, During Rapid Transit Subway Construction. Looking South Showing New Empire City Subway of 48 Ducts, Curving Downward in Order to Pass Under a Consolidated Telegraph & Electric Subway Company's Subway, a 12-Inch Water and a 6-Inch Gas Main.

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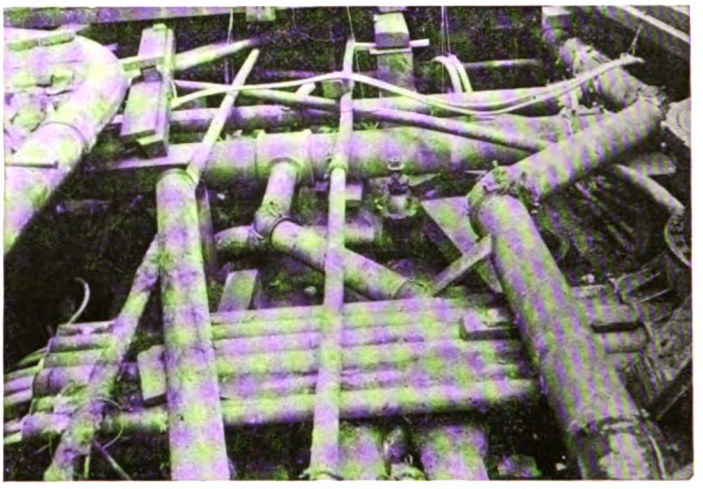
Spring Street, Just East of Broadway. Bank of 16 Ducts, Empire City Subway

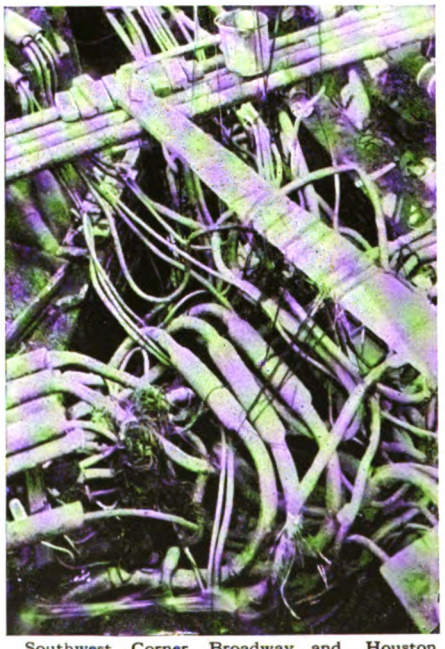


Southwest Corner Broadway and Spring Street Looking North

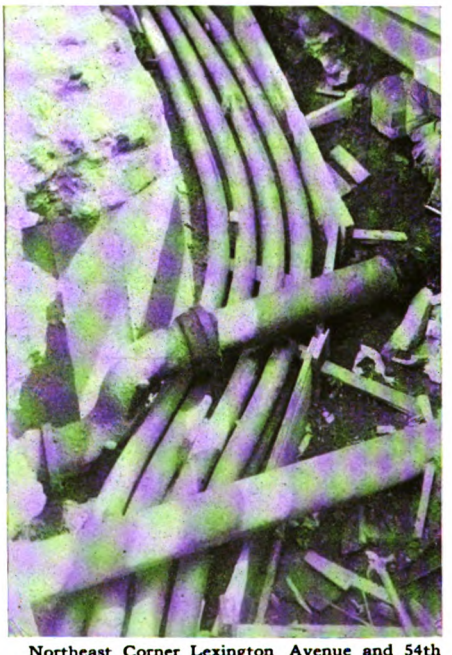
Pipe Bends for Empire City Subway on Broadway at Spring Street. Subway Changes on Account of Rapid Transit Subway Construction

Tenth Street at Broadway. Showing Empire City Subway Company's Hydraulic Pipe Bending Machines in Operation, Bending Ducts

amount of wrought iron pipe is also employed, its use being made necessary by reason of the following: In many instances the roof of the rapid transit tunnel is but five feet, or less, below the surface of the street. This forces the subway close to the surface, which location necessitates the use of iron pipe. Then again, the many tight situations encountered often cause the line to become a series of complicated bends, which cannot be made with clay conduit.



Southwest Corner Broadway and Houston Street. Looking Northwest Showing Cables in Empire City Manhole in Course of Reconstruction and Pipes Surrounding Same, During Construction of Rapid Transit Subway.



Northeast Corner Lexington Avenue and 54th Street During Rapid Transit Subway Construction. Looking North Showing the Empire City Subway Passing Under a Gas and a Water Main.

Time was when all bending of wrought iron pipe was performed by hand. Even before the advent of rapid transit work it was, of course, occasionally necessary to install iron pipe in curves, which were laboriously made by manual labor, a very lengthy and expensive process. For the last three years, however, the majority of pipe-bending jobs have been performed with the aid of a hydraulic pipe-bending machine. With this machine it has been possible to make some complicated bends. For instance, there are examples of both a horizontal and a vertical bend in one twelve-foot length of pipe, and a reverse curve is not at all uncommon. On rapid transit work, during the year 1915, this Company alone bent 147,000 feet of wrought iron pipe, a figure which does not include that bent by the contractors on the work.

[*Part 3 will appear in an early issue*]

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AT a meeting of the Executive Committee of the Main Society held on July 13, at which the chairmen of the three up-State sections were present, a radical change in the policy to be pursued in future was adopted, as was forecast in our issue last month. The Main Society has grown so large and the membership is so diversified that meetings which might be attended with profit and pleasure by a few fail to attract a majority, and since the Society exists for all its members and not for some of them only, the Executive Committee has begun its work for next season by planning two occasions which will rank with the famous affair of May 19; at least one other meeting will be held during the season.

October 10

In the first event, all the members of the up-State sections will participate, and for the first time in its history the Society as a whole will hold a session. This will be on Tuesday evening, October 10, beginning sharp at eight o'clock. There are two things about this to remember, first, the date, and second, that admission will be only by ticket.

In Albany, Syracuse, Buffalo, Rochester, and perhaps other centers up-State, the members will gather in convenient halls, and in New York the Seventy-first Regiment Armory will probably again be the scene of interest and enthusiasm.

Each city will open the proceedings with a local program, probably music by its Blue Bell Orchestra and Glee Club. The presiding officers will then announce that all the cities will be joined together by telephone for the better part of an hour, during which many new and original features will be introduced, to the surprise and enjoyment of the members. It is expected, but too early to promise, that one of the latest and most surprising developments of the brilliant Engineering Department will be used. More of this later, perhaps.

After this, each meeting will continue the evening's program by itself, and from reports that are current, it is a pity that every member cannot be present in all the cities at the same time so as not to miss anything. The only further details that it is possible to report at the present time are those concerning the festival of goodfellowship and science at the Seventy-first Regiment Armory.

Among other things there will be demonstrated by the A. T. & T. Engineers a series of unusual electrical experiments.

There will be nothing slow or tame about this meeting—just one big thing after another.

Musical Comedy in June

Here is where the Telephone Society will shine with brilliant radiance!

Those who were fortunate enough to see the performance given in honor of the Telephone Pioneers a few years ago need not be told that there are some regular actors and singers in the membership of the Society, and somewhere around the first of next June, when the Hippodrome or some other suitable theatre is available, a regular musical comedy, written with the telephone as the central figure, will be produced exclusively for the members of the Society. It will not be any combination of vaudeville acts set to ragtime, but a production worthy in every respect of the distinguished composer and librettist who will write the music and the book, and of the dignity and sublimity of the subject. Now, that is "going some" for a musical comedy, but wait and see!

Join Now!

As *admission will be by ticket only* on these occasions, and applications for membership will be accepted in the order of their receipt until no more can be accommodated, it is advisable for all non-members who wish to attend to send in their applications at once. Blanks may be obtained from any member of the Society, or from J. D. Newman, Secretary-Treasurer, No. 15 Dey street.

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Cleaning Heat Coil Contacts

By J. L. Pitcher, Wire Chief, Flatbush

CORROSION of electrical contacts has been a disturbing element in the whole electrical field and dates back to the time that the first efforts were made to induce the current to play its destined part in our human affairs. A great amount of thought, energy and experimental work has been expended along the line of providing means for overcoming the tendency of electrical contacts to become corroded, as it is at the contact that much of the actual work is done, and if the continuity of the current ceases at the point of contact, apparatus becomes inoperative and fails in its mission. Judging by the trouble that defective contacts have caused in the past, they belong to the group that demonstrate "the innate depravity of inanimate things."

In telephone central offices we have experienced trouble due to surface corrosion of the protector springs and much time has been spent on methods looking toward the possibility of cleaning the contacts without interfering with the service.

At the Flatbush central office experiments have been conducted during the past two years in the endeavor to develop a system for cleaning the spring contacts that would be suitable for the conditions under which the telephone equipment has been installed.

Heat coil contacts on main distributing frame protector strips are made of rolled German silver. In passing the metal through the rolls a planishing effect is imparted to the surface, giving it a smooth, semi-polished appearance, which is heightened by the chemical cleaning process that the spring parts undergo after they are punched from the flat strips.

German silver has many excellent features, among which we find toughness, elastic qualities that allow it to be used for springs, and its ability to retain its bright surface for a considerable time under normal conditions. In telephone practice, it is found that in the course of years, German silver springs become coated with a non-conducting medium resembling an oxide or rust which interposes troublesome electrical resistance at the heat coil contact surfaces.

Various devices have been tried out in order to remove the corrosion from the surface of the springs, and after certain trials had been made, it appeared that the ideal process would be one which provided a clean surface, without residue in the form of polishing paste, lint, grease, or dust. The usual metal polishing powders, buff wheels, tripoli, etc., could not be satisfactorily used on account of the small orifices, averaging $\frac{3}{8}$ inch by $\frac{3}{8}$ inch in size; this being roughly the space between the springs after the heat coil has been removed. The sharp edges of the outer springs shave off leather, felt, and wood burnishers so rapidly that we decided to experiment with a flexible medium that would not be affected by the sharp cutting edges of the springs.

German silver wire was finally found to suit the conditions very well. Several hundred No. 36 B. & S. gauge wires were bound together and mounted on a small steel spindle which was rotated between the spring contacts. This wire brush quickly removed the corrosion from the springs, throwing it off as fine dust. The large number of fine wires burnished the surface, leaving the springs bright and smooth. German silver wire acting on German silver springs provides a dry cleaning and neutral process that eliminates trouble caused by the use of dissimilar substances.

In the Long Island Division, protector strips are mounted on the main distributing frames on 8 inch centres, providing a clear space between adjacent strips of $5\frac{1}{2}$ inches. This spacing allows two methods of cleaning: First, the heat coil may be removed, after which the wire burnisher may be inserted directly from the front of the protector springs; second, the burnisher may be applied at right angles to the springs from the sides, utilizing the $5\frac{1}{2}$ inch clear space. The first method requires the use of both hands to hold the burnishing device, the second method requires the use of but one hand to hold the outfit, leaving the other hand free to withdraw and replace heat coils or dummy equipment.

Shortly after the single hand cleaning device had been constructed, we had a good opportunity to try it out in practice. Certain subscriber terminals were added to a trunk cable between two central offices which had heretofore been classed as unexposed, being provided with the usual dummy heat coils or pins at each office; these pins required only $\frac{1}{32}$ inch contact on each side of the fork-shaped outer spring. After the subscriber terminals had been connected, we replaced the pins with No. 67 heat coils which cover $\frac{3}{32}$ inch on each side of the outer springs. Several cases of "opens" were reported very soon and upon investigation it was found that while the $\frac{1}{32}$ inch space was bright, corrosion covered the spring surface outside of this space, being sufficiently heavy to prevent the larger surfaces of the heat coils from making contact, the bright surfaces being bridged over. A slight movement of the heat coils was sufficient in certain cases to cause an "open," a "cutout," or a "noisy" trunk. We cleaned all of the contacts as rapidly as possible, using the single-hand method in this manner: With one hand the heat coil was removed and held in the heat coil pliers, the rotating brush was quickly introduced between the springs, and being of metal and a conductor, the circuit was closed again immediately; after a few seconds cleaning the burnisher was quickly withdrawn to allow rapid replacement of the heat coil. The interruption was so slight that it passed unnoticed on busy trunks and calling circuits during the cleaning process. Tests made afterward on a busy line showed that the cleaning could be done without seriously affecting service, as the momentary interruptions were heard only as slight "clicks" in the receiver.

The resistance of a pair of cleaned heat coil springs is negligible. When a cleaned No. 67A heat coil is placed between two cleaned springs, the resistance is shown to be that of the No. 67A heat coil, averaging very close to $3\frac{1}{2}$ ohms. In practice it is found that with clean heat coils between protector springs that have been in use for a few years, we may expect to find a considerable increase in resistance. A general average of 5 ohms for the combination is not uncommon and it often rises to 8-80-100-500 and plain open circuit. By moving a heat coil between corroded springs it is often found that its resistance changes considerably.

The contacts on the heat coils must not be overlooked, as it is of considerable importance to keep these contacts bright, thereby reducing resistance materially, avoiding noisy line conditions, and other trouble due to varying resistance in the circuits. An efficient heat coil cleaning device which will clean the surface without residue, without breaking the soldered connection, or wearing down the fiber stud on top of the heat coil, may be made by using a circular brush, made up of fine German silver wires, such as are used by metal polishers. The brush can be mounted on the shaft of a fan motor and will give good results at 1,200 to 1,800 revolutions per minute.

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The heat coils may be cleaned two at a time by holding one coil in each hand against the revolving brush, turning each coil by the fingers to clean all of its surface. In doing this work safety goggles should be used to guard against loose particles flying into the eyes.

The spring cleaning outfit consists of a 1/6 H.P. motor, operated from the lighting circuit at 1,200 to 1,800 R.P.M., a 6 foot flexible shaft such as is used by die sinkers, provided with handle and chuck for holding small tools. The one-hand cleaning device is a frame provided with a small flexible shaft and chuck, the frame fitting over the die sinkers' handle to allow the burnishing tool to be used at an angle of 90 degrees from the handle, in order that the tools can be used in the 5 1/2 inch clear space between the springs of adjacent protector strips.

In cleaning the spring contacts it is only necessary to clean the actual points where contact is made between the heat coil and the springs; these contacts consist of the crown on the under side of the outer spring and the surface around the slot of the inside spring. The brushes are made slightly larger than the heat coils to clean all of the surface required for contact.

The time element of the cleaning processes is shown in the following table:

TO CLEAN 100 INSIDE AND OUTSIDE SPRINGS WHILE STANDING ON THE FLOOR LEVEL

Team-work.

One man to clean springs, using one or two-hand method, and one man to remove old and replace cleaned heat coils, 25 minutes.

Single-handed.

One man to remove heat coils, clean springs, and replace heat coils. One-hand method, 45 minutes.

To clean 100 inside and outside springs, above floor level, using ladder. Single-handed, 90 minutes.

To clean 100 heat coils, using round German silver wire brush, two coils at a time, using both hands, 8 minutes.

The Uses of Safety Goggles

By J. R. Lane, Division Equipment Engineer, Syracuse

THE Central Division Safety Committee recently decided that all motorcycle riders should be supplied with goggles. A study was made of various types, a decision reached as to the kind best suited to our needs, and a supply purchased.

In connection with the work of installing a new central office at Ilion, N. Y., it became necessary to "burn in" a set of storage battery plates. This operation connects the individual battery plates in each cell to heavy lead bars, and is accomplished by placing an iron clamp or mold on an extension of the plate and against the bar, heating the lead on the bar and plate to the melting point and filling the intervening space with molten lead. The heating and melting of the lead is done with a flame, using a combination of oxygen and hydrogen gases, and it is "SOME" HOT. As the molten lead occasionally blows out of the mold, due to moisture or other causes, it occurred to me that goggles should be worn by the employees engaged in this work, and accordingly we arranged to furnish them.

While Mr. Thomas Monahan, chief foreman of installation, was engaged in this work a large quantity of molten lead blew out, striking directly on the goggles and completely covering one lens and a part of the other, but not injuring him. Had he been without goggles he would have been seriously burned, at the least, and probably his sight would have been injured or destroyed.

I consider that this one instance has more than offset the cost of goggles for the entire Division. I believe that there are many classes of work done by employees in which goggles could be used to advantage, and I would recommend that supervisors and foremen look into this matter and report their conclusions to their respective Safety Committees.

Dry Powder Fire Extinguisher

By Edward G. Hildebrandt, District Inspector's Office, Equipment Department, Brooklyn

IN Brooklyn a scheme is being used effectively to pulverize caked powder in dry powder tubes. The apparatus may be easily constructed, as follows:

Procure a one-quart flour sifter and a funnel of sufficient size to fit over the lower end of the sifter. Remove the spout of the funnel so that an opening of at least 3/4 inch is formed. Make a cylinder of tin, slightly tapered toward one end, about 3 inches long and of sufficient diameter to fit snugly into the mouth of the dry powder tube. Make 3/8 inch slits about 3/8 inch apart around the larger end of the cylinder and press it over the lower end of the funnel so that the little flanges, formed by cutting, bend outward to conform with the shape of the funnel. Solder firmly in this position.

The inspector of dry powder tubes may then proceed as follows:

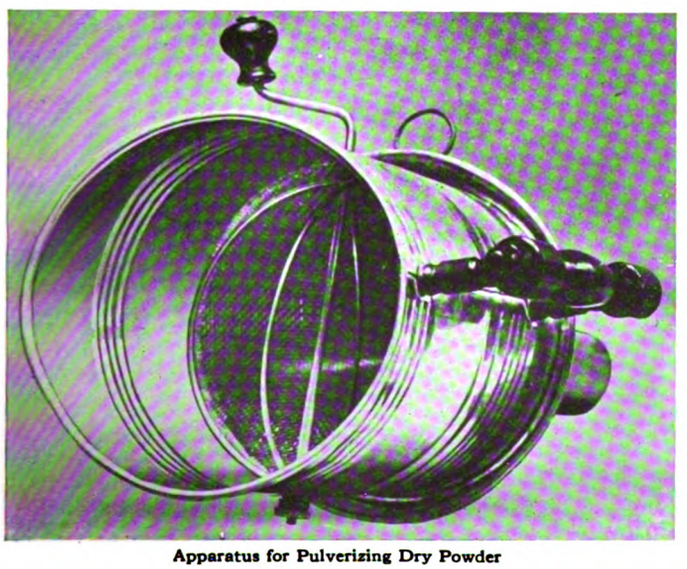
1st. Empty the powder from one of the tubes into a convenient receptacle.

2d. Place end of funnel into empty tube and sift powder from a full one into the empty one.

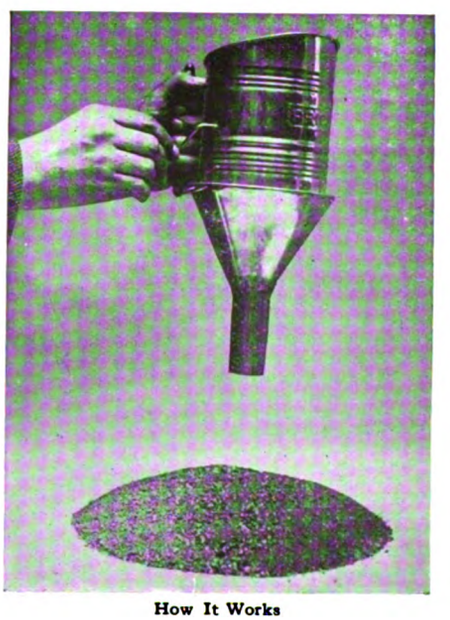
3d. Place the now full one on the rack and proceed with others in a similar manner.

After all have been inspected, the last tube may be filled with the powder removed from the first one.

This method is convenient, saves time, and does a better job than the old way of emptying powder on paper and pulverizing it by crushing.



Apparatus for Pulverizing Dry Powder



How It Works

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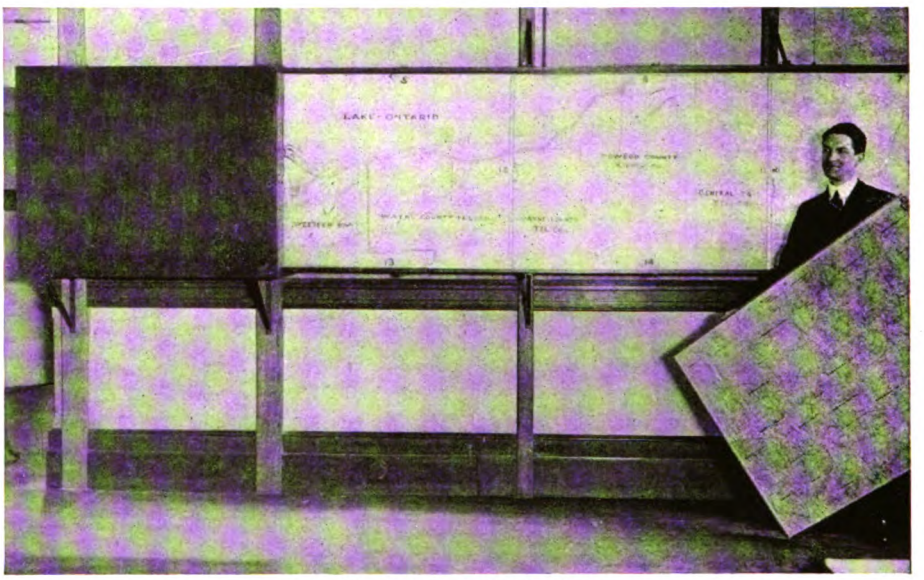
A Development in Map Mounting

By E. J. Buchaca, District Engineer, Syracuse District

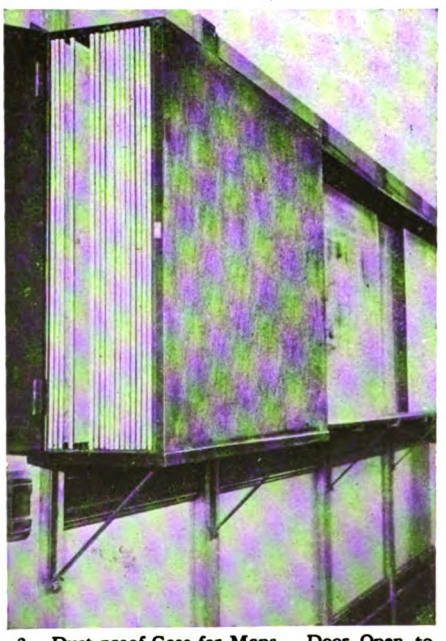
MAPS are important tools in the telephone business. It is difficult to conceive how we could handle some phases of telephone work if we were deprived of them. They have come to be a very vital part of our planning and operating departments.

In a constantly developing territory the maintenance of maps is an item of considerable expense. Those in charge of the preparation and maintenance of such maps are therefore confronted with the problem of making the maps show as much information as possible, keeping them posted to show the latest conditions, and yet doing this at a minimum cost.



1. The New Method in Operation

One of the most common methods of handling maps in telephone work has been to mount them on rollers like window shades. A number of these rollers have been arranged in a box on the wall near the ceiling to keep the maps free from dust and out of the way when not in use. It has been found, however, that the racks do not keep them dustproof. Some of these maps are clearly shown in Illustration No. 3. At first these maps were used to show the relative locations of towns and villages, but as time went on, other information was entered on them for convenience. This information consisted of the boundary lines of exchange districts, the routes of toll lines and subscriber lines, the names of connecting companies operating in certain areas, the numbers assigned to the various tax districts, the numbers of the poles located nearest to the boundaries between exchange districts and between tax districts, and considerable other detail, all of which added to their value.

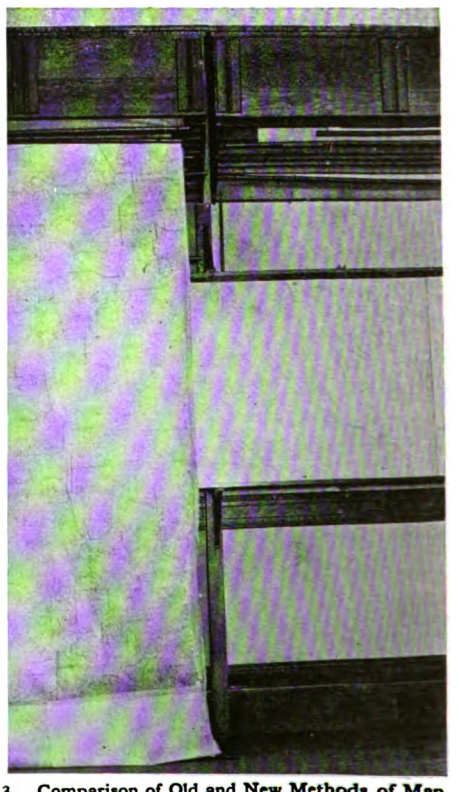


2. Dust-proof Case for Maps. Door Open to Permit Removal of Map for Correction

Pulling a map up and down had a tendency to wrinkle it, the wrinkles soon became cracks, and parts of the map were torn off. After a map had been used for a couple of years much of the information was in danger of being lost and the usefulness of the map was impaired. It thereupon became necessary to make up a new map and laboriously to transfer all the data from the old map at considerable expense for labor.

We looked about for a new idea, and after considering several, decided upon the scheme shown in the photographs. It consists of having sections of the maps mounted on "compo" board (a kind of wall board) of a convenient size, and arranged to slide in grooves or tracks along the wall. A picture of the complete outfit is shown in Illustration No. 1. In order that any one of the mounted maps could be placed end to end with any other, a track for each map was needed. As there were to be twenty maps, each measuring 36 by 47 inches, it was feared that the tracks would extend too far out from the wall, but by having them made of metal only 13 inches were required.

At the end of the track a housing or case for the maps was built of sheet metal with a door at the far end so that the maps could be slid out for changes. This is clearly shown in Illustration No. 2. The maps were mounted on the board and coated, first with shellac and then with a good quality of varnish. To prevent warping a sheet of paper was pasted on the back of each mount, and this too was shellacked and varnished. The edges were bound with nickel-plated steel. The vertical edge, that would be at the open end of the housing when the map was under cover, was made wider than the others, so that it would almost touch the edges of the neighboring maps when in the case, and



3 Comparison of Old and New Methods of Map Mounting

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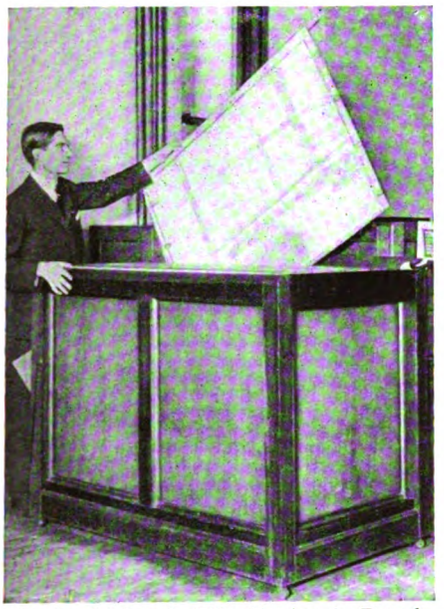


4. Special Case for Filing Tracings for Record

make the housing dustproof. On this edge a handle was placed. The handles of the adjoining maps were staggered for convenience in pulling them out.

In order to use ink on the varnished surface, it was found necessary to rub the surface down a bit with "rotten stone," and in the case of Higgins' black ink to add just a little glycerine to avoid flaking. For colored ink a fresh bottle of Higgins' colored ink unadulterated or of Columbia ink with a small amount of alcohol and glycerine added will give good results.

One great advantage of these maps over the roller type is that erasures can be made readily by rubbing with a damp cloth without disturbing the surface, and the map can be cleaned with gasoline without disturbing the inks. With the roller type of map the ink got under the surface because of the cracks, and it was necessary to cut into the map to make erasures, and, further, there was no known way of cleaning it. Erasing without disturbing the surface results in extending the average life of a map and thereby eliminates frequent renewals. Another advantage lies in the fact that the separate maps can be taken out one at a time and corrected while other people are using the rest of them. With the roller type the map had to be taken down to do a good correcting job, and the map was out of service in the meantime. Frequently it was kept out longer than necessary on account of the inconvenience of replacing it in the rack. It has also been found that much neater drafting work can be done on these maps, and as a result more information can be placed on them, making a more satisfactory record in every way. Illustration No. 3 shows the contrast between the roller type and the new type of map.

There was another problem in this matter of records that needed attention. It had been customary to keep certain information on large charts that were kept upon long tables. The chart wanted was usually near the bottom and in pulling it out the map became cracked and the bindings became torn, and finally ripped off. These maps were even less durable than the roller maps, but as it was necessary to copy information from them frequently, and it was more convenient to do so while they were on a flat horizontal surface, such as a table, it was not practicable to keep them in roller racks. To provide a compact and less destructive filing arrangement, a special map case was designed and built as shown in Illustration No. 4. The mounted maps and charts were suspended upon individual sticks, and allowed to hang free without rubbing. To remove or insert a map the adjacent sticks are readily slid forward or back to give sufficient space. By double racking, forty-two maps were placed in a space of thirty inches, which included sufficient clearance for convenient handling. This worked very satisfactorily, except that owing to changes in the records, in due course of time new charts must be made up. This involves bringing the tracings up to date, making white prints from them and mounting these prints at considerable expense. If between times a print from any of the tracings is requested by anyone, the tracing has to be checked with the chart and brought up to date. On the other hand, if it is kept up to date two entries must be made, one on the chart and one on the tracing, every time work is done and the records are corrected, always with the possibility of introducing errors.

A plan which has proved very satisfactory is to use the tracings themselves as the records. This is quite a departure from old ideas and the natural objection is that the tracings would not stand the wear and tear. To avoid this difficulty, some heavy paper with edges turned over was fastened to the stick and then the tracings placed in the frame so formed. The tracings were held to the paper with fasteners, and to the stick with small screws and washers. One of these is shown in Illustration No. 5. Several months' use has proved the value of the scheme. The chart tables have been eliminated along with the charts. The tracings are now always up to date and prints can be obtained from them at a moment's notice. The expense of making new prints and mounting them periodically has been eliminated.

In posting changes and additions only one entry now has to be made, so there is less chance of error. It may be interesting to note that during the past six months there has been no occasion to make prints. The tracings are in far better condition than when kept in large flat drawers and this will more than offset the wear and tear caused by their use as charts, so that as a result their life will be extended.

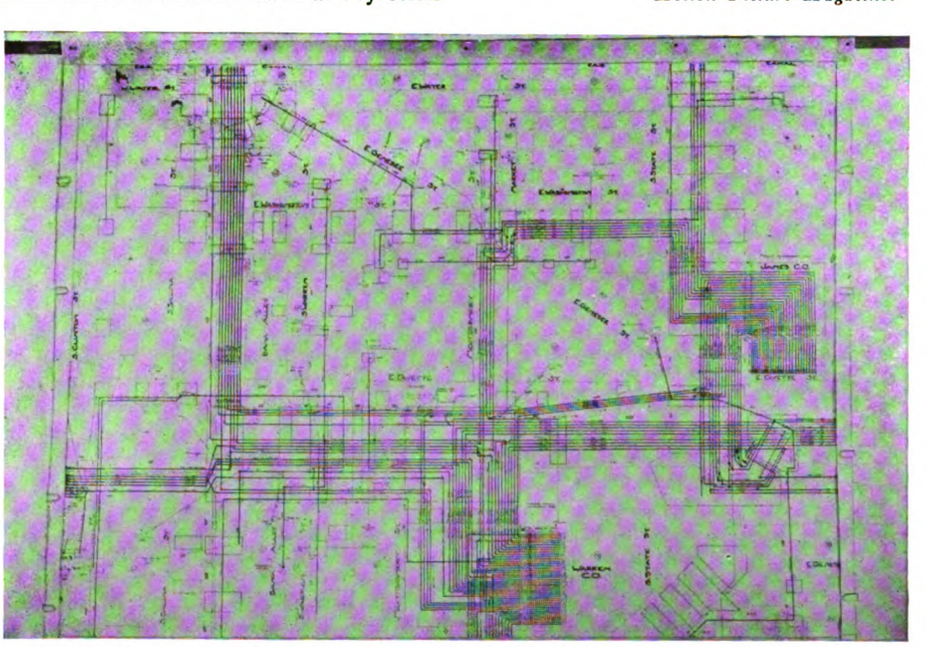
The experiment has been so successful that not only are all the underground and aerial cable charts being kept in this way, but also the toll wire diagrams and the assignment clerk's maps and charts.

The details of both of these schemes were worked out by Mr. R. L. O'Connell, engineer and record clerk at Syracuse.

"NUMBER, PLEASE!"

I don't see however they know it,
But picture-play actors all do it;
They don't have to look
In the telephone book,
But grab up the phone and go to it!

Motion Picture Magazine.



5. Tracing Mounted for Filing. Note Heavy Paper Binding Edges, and Stick for Rigidity and Ease in Handling

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From Coast to Coast

Campaign Managers Now Cover the Country by Telephone

VANCE C. McCORMICK,
Campaign Manager for President Wilson

WHO will be our next President? President Wilson and Mr. Hughes are the men most directly concerned in the answer, and each has chosen a manager to conduct the campaign for him. It has been asserted that the candidates are very much alike in character; there is a striking similarity in their campaign managers, also—in one respect, at least. Both Mr. McCormick and Mr. Wilcox are firm believers in the telephone as a vote-getter. Our pictures show these two men "in action," and from now until Election Day the telephone wires will hum in the greatest contest by telephone that has ever been waged.

The opening of the Transcontinental Line and the enormous growth of the Bell System throughout the entire country, which have come within the past four years, will enable these two astute and able political managers to direct their respective lieutenants, receive reports, and gauge public sentiment more quickly and accurately than has ever been possible heretofore. Every important city in the country is now within easy voice communication, and a word over the wire may save a situation which otherwise would possibly cost a State's electoral vote.

WILLIAM R. WILLCOX,
Campaign Manager for Mr. Hughes

Watch the politicians and they will show the business men how to make the most out of the telephone.

A Voice Across the Telephone

A voice across the telephone,
May make or mar the day,
Be careful of the tone you use,
And think on what you say.
Your pleasant smile cannot be seen
Or known your kindly heart,
For people on the telephone
Are often miles apart.

The girl who answers, central,
Has a score of lines to mind,
Mistakes are sure to happen,
So be patient and be kind.
For life is like a garden,
Where our daily acts are grown,
And as nature has ordained it
We shall reap as we have sown.

Then sow a smile and reap a smile,
And in the end you'll find,
That nothing pays more interest,
Than the art of being kind.

WM. J. ROBINSON.

Prepayment Service

"NOW, Central, be ready. I'll put a quarter in. You let it go all the way across the wire to his telephone. It's a tip. Don't return it to me. Return it to him."

The subscriber's voice became quite crestfallen after delivering the above instructions, when the supervisor explained that the ability of the telephone to oblige its patrons did not extend to the physical transportation of money.

HELENA McCARRON,
Evening Chief Operator, Bushwick.

Association of Railway Telegraph Superintendents

THE thirty-fifth annual convention of the Association of Railway Telegraph Superintendents was held at the Hotel St. Paul, St. Paul, Minn., June 20 to 23, inclusive.

The business session opened on Tuesday morning, and addresses were made by the Mayor of the city; Mr. C. H. Wilson, general manager A. T. & T. Co.; and several others.

During the business sessions of the convention the following papers were read and discussed:

1. "Construction and Maintenance, Outside Plant."
2. "Construction and Maintenance, Inside Plant."
3. "Wire Chief Equipment and Routine."
4. "Protection Against Electrolysis."
5. "Protection Against Lightning and High Tension Circuits."
6. "Telephone Development."
7. "Railroad Message Traffic."
8. "Full Use of Wires."
9. "Wireless Telegraph and Telephone Development."

Mr. J. J. Carty, chief engineer A. T. & T. Co., prepared a paper outlining what had so far been accomplished by the Bell system. In the absence of Mr. Carty his paper was read by Mr. Drew, secretary of the association.

The attendance surpassed any other annual meeting, about 225 having registered, and it is also the consensus of opinion that it was one of the best business meetings ever held.

The following officers were elected for the ensuing year:

President, M. H. Clapp, Supt. of Telegraph, Northern Pacific Railway.
First Vice-President, J. F. Caskey, Supt. of Telegraph, Lehigh Valley R. R. Co.
Second Vice-President, F. T. Wilbur, Supt. of Telegraph, Illinois Central R. R. Co.
Secretary and Treasurer, P. W. Drew, Supt. of Telegraph, Minneapolis, St. Paul, Sault Ste. Marie R. R. Co.

Plant Accounting Outing

THE members of the Plant accounting force held their sixth annual outing at New Dorp, Staten Island, on June 17. They spent a very enjoyable afternoon and evening and sustained their reputation for being able to produce a good time.

During the afternoon athletic events were held; a baseball game between the married and single men resulted in a score of 12 to 5 in favor of the married men.

Events for Men:	1st Prize	2d Prize
75-yd. run, novice	J. F. Healy	M. Sullivan
220-yard run, novice	P. Knego	H. Korn
¼-mile run, handicap	F. P. Flynn	E. Kelly
50-yard run, supervisors	J. F. Maguire	J. J. Robinson
Events for Women:	**1st Prize**	**2d Prize**
50-yard run	Miss J. McDonough	Miss K. Garnjost
Throwing baseball.	Miss F. Eaton	Miss M. E. Day

Dinner was served at six o'clock to 134 members of the Plant accounting force and their friends, after which there was dancing.

The affair was in charge of the Welfare Committee.

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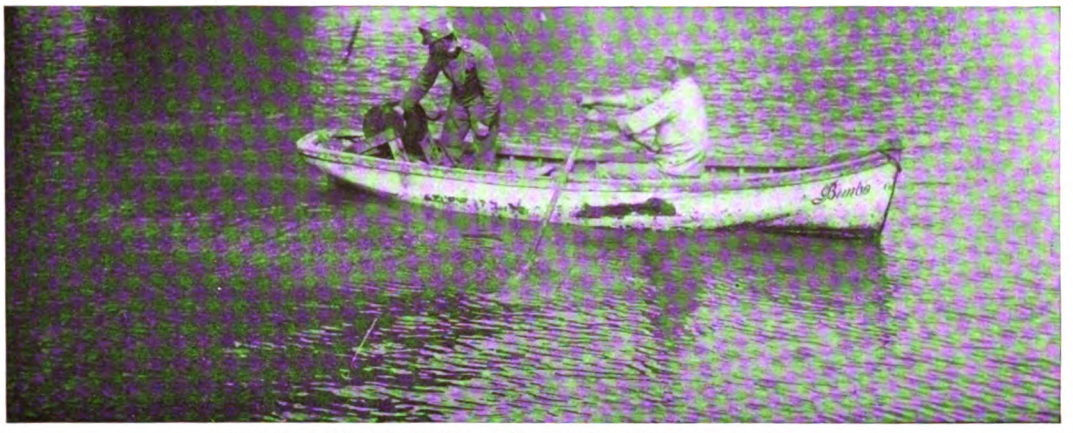
Over the Telephone Lines of Europe

HERE and there through the news of the day and week come snatches of stories, allusions to incidents and conditions which indicate a rich store of telephone interest never fully revealed in the brief dispatches. Piecemeal descriptions of incidents they are, but all show in one way or another the efficient work of the telephone in the trenches and behind them, the pathos, the humor, the heroism which cluster about the varied parts the telephone is playing in the world drama. Sometimes the glimpses may be woven together, and sometimes they are but unrelated sidelights on a dozen different phases of the life or death meaning of the telephone service, with only the one big theme in common—that the service in war-racked Europe is playing the same indispensable part as in the commercial and private affairs of Americans.



Austrian Soldiers Laying Submarine Telephone Cable Across River

From London we hear the nonchalant remark of an officer, who had evidently been a prisoner. His grim message is shot with a quiet irony rather intensifying than relieving the shadow of the words:

I narrowly escaped being shot just after dawn that morning because the Germans fixed the wire of a field telephone across the window out of which I was looking. The men told us that if the wire was touched the street would be shot to pieces.

So much for the importance of one telephone wire!

German Telephone Post in Poland

An altogether fresh viewpoint with regard to the extreme specialization which is characteristic of modern warfare is launched by "The Junior Sub" in *Blackwood's Magazine*. If the tendency which so sorely tries the humorous captain whose words we quote continues and increases, the pacifists may look to it as their most powerful ally, since regiments so disintegrated will be useless for fighting, and hence war, specialized to its destruction, must cease perforce! Perhaps some Mark Twain of the Company may evolve the plan by which peace may thus be restored, from the words of the unhappy captain:

I was once—only a few months ago—commander of a company of 250 disciplined soldiers. I still nominally command that company, but they have developed into a heterogeneous mob of specialists. If I detail one of my subalterns to do a job of work, he reminds me that he is a bomb expert, or a professor of sandbagging, or director of the knuckleduster section. They are "experts," if you please, and are struck off all fatigues and company duty! It was bad enough when Ayling pinched fourteen of my best men for his filthy machine guns; now the company has practically degenerated into an academy of variety artists.

The telephonist, we notice, is not named as one of the recalcitrant specialists, undoubtedly because he was too busy to be called upon.

Subsequently in the same article the work of the telephonist is portrayed in all seriousness, and rarely has there appeared a more vivid picture of the humanitarian as well as the military value of the telephone in the trenches than is depicted in a conversation reproduced in this magazine. During the rest period, from two to five in the afternoon, when the soldiers and officers were snatching "forty winks," "Bobby" was awakened in disgust by shrapnel bursting near him.

French Soldiers Telephoning Results of Battle

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Things are growing serious. Five minutes later Bobby, having dispatched his wounded to the dressing-station, proceeds with all haste to Captain Blaikie's dugout.

"How many, Bobby?"

"Six wounded. Two of them won't last as far as the rear, I'm afraid, sir."

Captain Blaikie looks grave.

"Better ring up the gunners, I think. Where are the shells coming from?"

"That wood on our left front, I think."

"That's P27. Telephone orderly, there?"

A figure appears in the doorway.

"Yes, sir."

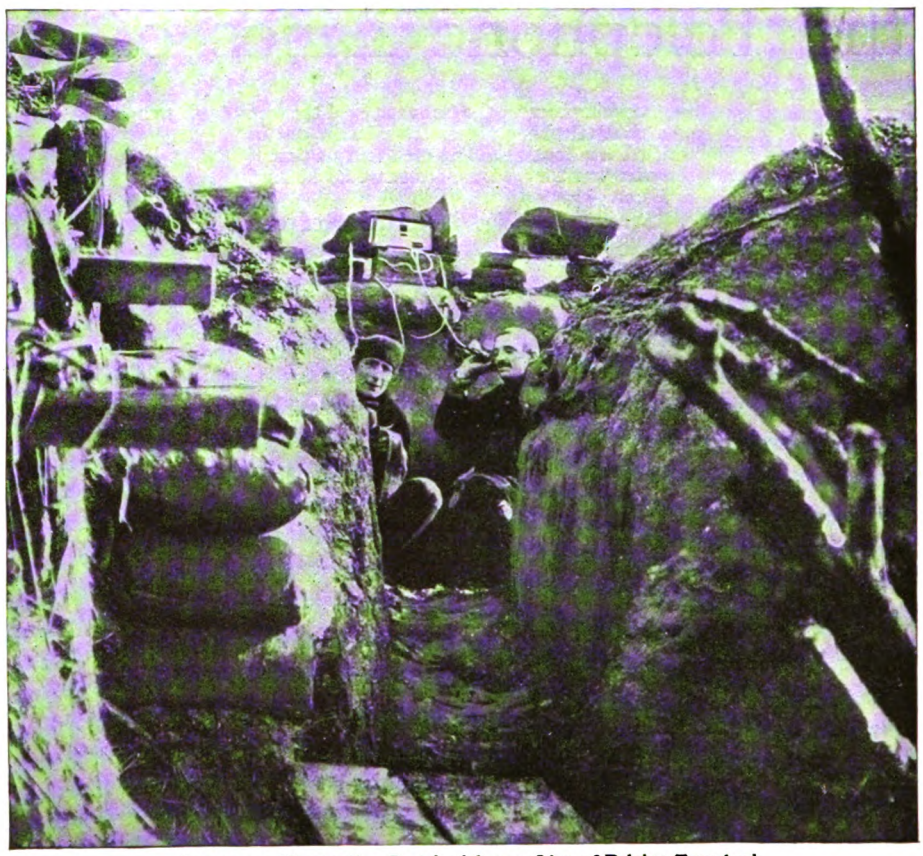
"Ring up Major Cavanagh, and say that H21 is being shelled from P27. Retaliate."

"Verra good, sirr."

The telephone orderly disappears, to return in five minutes.

"Major Cavanagh's compliments, sirr, and he is coming up himself for tae observe from the firing-trench."

"Good egg!" observes Captain Blaikie. "Now we shall see some shooting, Bobby."



Dangerous Observation Post in Advance Line of Belgian Trenches]

Presently the gunner-major arrives, accompanied by an orderly who pays out wire as he goes. The major adjusts his periscope, while the orderly thrusts a metal peg into the ground and fits a telephone-receiver to his head.

"Number one gun!" chants the major, peering into his periscope; "three-five-one-nothing-lyddite—fourth charge!"

These mystic observations are repeated into the telephone by the cockney orderly, in a confidential undertone.

"Report when ready!" continues the major.

"Report when ready!" echoes the orderly. Then—"Number one gun ready, sir!"

"Fire!"

"Fire!" Then, politely—"Number one has fired, sir."

The major stiffens to his periscope, and Bobby Little, deeply interested, wonders what has become of the report of the gun. He forgets that sound does not travel much faster than a thousand feet a second, and that the guns are a mile and a half back. Presently, however, there is a distant boom. Almost simultaneously the lyddite shell passes overhead with a scream. Bobby, having no periscope, cannot see the actual result of the shot, though he tempts Providence by peering over the top of the parapet.

"Number one, two-nothing minutes more right," commands the major. "Same range and charge."

Once more the orderly goes through his ritual and presently another shell screams overhead.

Again the major observes the result.

"Repeat!" he says. "Nothing-five seconds more right."

This time he is satisfied.

"Parallel lines on number one," he commands crisply. "One round battery fire—twenty seconds!"

For the last time the order is passed down the wire, and the major hands his periscope to the ever-grateful Bobby, who has hardly got his eyes to the glass when the round of battery-fire commences. One—two—three—four—the avenging shells go shrieking on their way, at intervals of twenty seconds. There are four muffled thuds, and four great columns of earth and debris spring up before the wood. Answer comes there none. The offending battery has prudently effaced itself.

At the front, as well as in the hectic offices of city editors on this side of the water, the telephone is the ready implement of the newspaper reporter. One

Life in the Trenches With Tommy Atkins

up and coming correspondent recently obtained an interview with the Crown Prince of Germany over the telephone. In fact, it was bestowed upon him. In his hotel in Berlin the newspaper man was summoned to the telephone one morning, shortly after he had telegraphed a question on the duration of the war to the Crown Prince. He was informed that His Imperial Highness the Crown Prince was calling from German general headquarters in France. (Under the marvelous system of military telephones, by which the Kaiser keeps in touch with every section of the frontiers, it was undoubtedly possible to put the call through without making an appointment for it the day before, as mere citizens had to do before the war.)

An aid asked the newspaper man if he preferred to speak in English and answering in the affirmative the reporter was at once connected with the Crown Prince himself, who had telephoned to answer the question put to him as to whether or not the war would be ended in 1916. "It is difficult to say whether our victory will be proclaimed in 1916, but of the ultimate outcome I have no doubt," said the Crown Prince. He continued his conversation with a brief discussion of the American policy of war supply exports.

Good "copy" by telephone the American newspaper men are accustomed to, and if it has been a rarer thing in Europe until recently, this incident of the "Royal Democrat's" readiness to be interviewed by telephone is a brilliant augury for the future.

Telephone Club Notice

The Grill will be closed for the summer and will reopen on or about September 15.

The Club House will remain open as usual through the summer months. If access is desired before 5 P.M., the key may be obtained from Mr. Martin, second floor of Chelsea Building, opposite.

"Central, I was out of town last week, but one of the neighbors said she heard the telephone bell ringing but didn't remember what day it was. Will you please tell me who it was that wanted me?"—*Southwestern Telephone News.*

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The TREND of REGULATION

By R. V. Marye, General Attorney

Elements Included in Minimum Charge

THE Public Service Commission of Missouri in its report for 1915, discussing the subject of minimum charges says, among other things, that such charges are fair in application and are recognized in practically all standards of rate making. That since a utility must incur expense in connecting a customer and must at all times be ready to render service, and since certain fixed expenses such as bookkeeping, reading meters, interest, repairs, and depreciation on meters and service connection are proportional not to the customers' demand but to the number of customers and go on continuously whether service is used or not, the utility is entitled to be recompensed for the investment and services involved in the maintenance of this condition. That, moreover, if such expenses are not paid by the recipient of the service they must be paid by fellow customers in the form of higher rates and thus become a discrimination against the customer who uses the service regularly.

Borough Authorities Cannot Arbitrarily Refuse Permit to a Telephone Company

THE Farmers' Mutual Telephone Company applied to the authorities of the Borough of Middleboro, Pa., for authority to extend its lines into said borough. The borough authorities refused to permit the extension and the company applied to the Court of Common Pleas of Erie County for a writ of mandamus. The Court held that a telephone company, under the Act of April 22, 1905, has the right to construct its lines upon any of the public roads or streets of a borough, subject to reasonable regulations, provided that the construction of its lines will not incommode the public use of such highways. That, although the consent of the municipality must first be obtained, the Legislature did not contemplate that such consent could be withheld except for considerations affecting the public welfare. That any arbitrary or capricious withholding of the consent by the municipal authorities cannot be justified. That the streets belong to the commonwealth and that the borough cannot exercise its discretion in the matter, but must issue the permit to which the company has a clear legal right.

Delinquent Subscriber Must Surrender Equipment

THE Georgia Railway & Power Company discontinued service to one of its subscribers who had failed to pay his bill, and upon the subscriber's offer to pay up if service were reconnected the company refused to make the connection unless a reconnection charge of $1 was paid. The subscriber refused to pay this charge, or to surrender the company's meter and lamps unless the balance of a deposit which he had made as security for the performance of his contract for service was returned. Thereupon the company brought an action to recover possession of the equipment, and the Georgia Court of Appeals, reversing the Municipal Court of Atlanta, held, among other things, that the deposit was collateral security for the performance of all the terms of the contract for service and not merely security for the subscriber's bills. That when the subscriber failed to pay his bill at the time stipulated in his contract he breached the contract and the company had the right to cut off its supply of current and to recover its property and equipment.

Owner of Abutting Property Cannot Restrain the Construction of a Telephone Line

THE Pulaski County Court of Virginia, in the case of Alexander, et al., *vs.* Virginia & Tennessee Telephone Company, et al., held that the plaintiff's contention that the county had only an easement in its roads for the purposes of travel, and that the bed thereof was owned by the abutting owners, was not tenable. That, on the contrary, the fee simple in the roads of the county was vested in the Board of Supervisors which had power to grant the right to erect telephone poles and wires thereon, and that, therefore, plaintiffs who were owners of property abutting on the proposed telephone line were not entitled to an injunction to restrain its construction.

Telephone Company Justified in Refusing to Serve a Person Carrying on Criminal Business

ON complaint of the police authorities of New York that one Restmeyer was using his telephone for the purpose of receiving and registering bets on horse races, the New York Telephone Company removed the telephone from Restmeyer's saloon. Restmeyer secured a peremptory writ of mandamus from the special term of the Supreme Court directing the company to restore the telephone. The company appealed to the Appellate Division of the Supreme Court which held that the police were justified in regarding Restmeyer's place as an unlawful resort, and that their request to the company to discontinue service therein was proper and in the interest of law and order. That it was not an unlawful or oppressive use of police power to interrupt telephone service by arrangement between the police and the telephone company in a case where the telephone was being used to carry on criminal business. That while the telephone company is bound to furnish service to all who pay its proper charges and obey its reasonable regulations, it is not required to furnish service to those who are reasonably sure to use it for illegal purposes. That, therefore, the New York Telephone Company was well within its rights in refusing service to Restmeyer, and that the writ of mandamus should not have been issued by the special term of the court.

Rates of Telephone Company in Its Chartered Territory Not Under Control of Local Authorities

THE Ashland Home Telephone Company acquired a franchise issued to a predecessor by the City of Ashland which provided that telephone service should be furnished to the city and to the County of Ashland at not more than $12 per year, per telephone. A contract made in pursuance of said franchise had been entered into between the company and the county. Upon the passage of the Public Utility Act the company notified the county that in view of said Act the rate thereafter would be $30 per year, per telephone, that being the regular schedule rate of the Company. Settlements were made on this basis for the years 1908 and 1909, but when the bills for service thereafter were presented the county disallowed them and the company appealed to the Circuit Court of Ashland County, Wis., which found in favor of the company. The county authorities appealed to the Supreme Court but later withdrew the appeal and submitted the question to the Railroad Commissioner of Wisconsin as referee.

The Circuit Court Judge held that the original contract which did not run for any specific time had been terminated by a new contract mutually entered into when the company notified the county of the increase in rates and the county paid for the service at the increased rates. The Commission approved this finding and held, moreover, that since the company had full authority under its charter to construct its lines upon the highways of the States and the streets of municipalities, subject only to reasonable regulations under the police power, the provisions of the franchise fixing the rates to be charged to the city and county were void and of no force or effect.

Competition Not Desirable

THE Public Utilities Commission of Illinois refused to grant a certificate of convenience and necessity to the Olivet Telephone Company, which sought authority to operate in Olivet and vicinity. It appeared that there was no complaint as to the service and facilities of the Vermillion County Telephone Company, which was already operating in the territory. The Commission states that its general policy, which has been adhered to in all cases, is that a certificate will not be issued to a telephone company to construct and operate in a city, village, or community which is already being adequately served at reasonable rates.

Rates Should Not Be Reduced at the Expense of Adequate Service

THE Duluth Street Railway Company applied to the Railroad Commission of Wisconsin for an order rescinding the Commission's order of November 13, 1912, which required the company to sell six tickets for 25 cents. As a basis for the application the company alleged that its gross earnings had decreased because of general business depression, jitney competition, increased private use of automobiles, wage increases, cost of injuries and damages, and paving obligation, and represented further that the necessary extensions and improvements in its service could not be made unless its earning power were increased.

The Commission held that when a reduction in fare stands in the way of improvements necessary to adequate service for all parts of the city, it is to the best interest of the public that the fare should be placed at such a figure that private enterprise will be willing to take the initiative in furnishing needed improvements. That, therefore, the riding public should forego the slight reduction in fares brought about by said previous order and be thereby placed in position

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to demand adequate service rather than to insist upon the carrying out of said order under which adequate facilities cannot be provided. The Commission states that there is no doubt that the automobile will continue to make serious inroads on electric railway revenues, and that in view of that fact and the other reasons set forth by the company the said previous order should be rescinded upon the receipt of satisfactory evidence that the company has in good faith entered upon the construction of the necessary improvements and extensions of its system.

Evils of Duplication

IN the City of Coeur D'Alene *vs.* Interstate Utilities Company, the Idaho Public Utilities Commission, on April 1, 1916, held, among other things, that duplicate telephone plants in the same city cannot be justified from any point of view. That from the standpoint of service, duplication is expensive and an absolute nuisance to patrons; from an economical standpoint it must necessarily be more expensive to the customer who must use both telephones; while from the standpoint of the companies it ultimately spells financial ruin.

Commission May Alter Rates Fixed by Franchise or Contract

THE Public Utilities Commission of Colorado in passing upon an application of the Colorado Springs Light, Heat & Power Company for a rehearing of an order of the Commissions which established a schedule of rates for the company held, among other things, that it was within the power of the Commission to eliminate discriminatory rates of a utility even though contracts with consumers or municipal franchise contracts were affected unless the constitution or Legislature expressly delegated to the municipality affected the power to contract inviolably for rates for the period covered by its franchise grant.

Obsolete Flat Rate Contracts May Be Terminated

IN Heiskell et al. *vs.* Chesapeake and Potomac Telephone Company the Court of Appeals of the District of Columbia affirmed the decision of the Supreme Court of the District which had refused an injunction to restrain the Telephone Company from discontinuing service under old flat rate business contracts which had been in force for many years, at the same time that the great majority of business subscribers had been paying for their service on a measured basis. The Court held that the main purpose of the Public Utilities Law, passed by Congress in 1913, was to prevent discrimination and that it was apparent that two fundamentally different schedules of charges for the same class of service cannot exist contemporaneously, and hence that the continuance of the flat rate contracts constituted unjust discrimination against the great bulk of subscribers who paid for their service in conformity with the measured rates which the company had filed with the Commission as its regular schedule, whereas it had filed a list of the flat rate contracts as irregular and "obsolete."

Franchise Containing Conditions Cannot Be Revoked if Accepted

THE Supreme Court of Illinois, in city of Canton *vs.* Illinois Central Electric Railway held, among other things, on February 16, 1916, that since the municipality had granted defendant the right to construct its railway and operate the same for a fixed period, by an ordinance which prescribed certain conditions, which ordinance was accepted by the railway company, a valid contract had been thereby created and that the municipality could not revoke the franchise or impose new conditions upon the company's operations thereunder.

Mountain Home Rate Case

AFTER hearings that extended over a period of one year, all the complaints made by subscribers in various parts of the territory of the Mountain Home Telephone Company against the rates and service of that company were dismissed by the Public Service Commission, Second District, in an opinion handed down on February 9, 1916. The Commission held that the Mountain Home Telephone Company was within its rights in acquiring the physical property of other telephone companies without the approval and consent of the Commission; that the burden of proof of the injustice or unreasonableness of rates of telephone companies is upon the complainants; that in this case this burden had not been sustained; that the method of acquisition of the property, upon the value of which the return of the telephone company is based, is not important; and that it is immaterial whether the property was acquired by the issuance of capital, out of income, by gifts, or otherwise; that the most unfavorable consideration of the evidence presented as to the value of the property would indicate that in 1914 the company received a return of three-quarters of one per cent. and for the first half of the year 1915, of one and three-quarters per cent.; that under these conditions no reduction in rates could be ordered, and that the complaints, so far as they related to rates, were not justified. The Commission also held that while the complaints as to service were justified at the time they were made, the improvements since made by the company had removed any ground for the issuance of an order regarding the service.

Abutting Owner Cannot Restrain the Operation of a Telephone Line

THE Supreme Court of Errors of Connecticut, on March 15, 1916, held, in Mitchell *vs.* Southern New England Telephone Company, that in a suit to restrain the use of a telephone line in front of an owner's premises, an allegation that the Telephone Company wrongfully failed to have the damages to said owner's land assessed and paid before the construction of the line, was insufficient to show that the company's act was in violation of such owner's rights. That an owner cannot enjoin the use of the telephone line in front of his premises unless the damages to be anticipated by the continuance of the line will be irreparable. That since the property owner has a remedy at law he is not entitled to an injunction to restrain the use of such line. That greater evil and inconvenience would result to the public were an injunction to issue than will result to the owner from the maintenance of such line.

Telephone First Aid Training Saves Life

THE Company makes a special point of training its men in the use of safety first methods.

Primarily accident prevention is for their own benefit individually, but its value and that of first aid are also great when the knowledge can be applied for the benefit of others.

Instances where safety first methods have prevented accidents are not, from their very nature, available, but first aid has been repeatedly the means of saving lives outside of the Company as well as within.

The Watertown *Daily Standard* of July 5 printed the following account of how telephone men saved a boy's life:

Lloyd Elmer, twelve years old, was found unconscious and bleeding from a fractured skull on the State road about four miles from Henderson Harbor between the Harbor and Campbells Point, by Wire Chief Henry L. Meade, of the New York Telephone Company, and William O'Driscoll, another employee of the Company. . . . The telephone men applied first aid treatment, and undoubtedly saved the boy's life. Only for the presence of the first aid kit in the use of which employees of the Company are instructed, and which are always carried on the autos of the Company, the boy would not have been saved.

The telephone men had been at Warner's Hotel, at Henderson Harbor, adjusting the telephone for the use of Secretary of State Lansing, and had started on their return trip to Watertown. When about four miles from Henderson Harbor they saw the boy in the road, lying in a heap with his bicycle. They stopped their auto and jumped out. The boy was not breathing, and the men applied their knowledge of resuscitation as taught by instructors of the Telephone Company. From the first aid kit they produced ammonia capsules, which they made the boy swallow. In a few moments the boy was again breathing, but he did not regain consciousness.

A woman who lived nearby 'phoned to Dr. H. C. Montgomery, of Henderson, who arrived in a little while. The boy was taken to the home of his parents, who lived about a quarter of a mile from the scene of the accident. He was still unconscious, and an examination showed that his skull was fractured back of the right ear.

After receiving treatment from the doctor he showed signs of regaining consciousness. He was able to say "Lloyd" when asked his name. Those present asked him how the accident happened, and he said, "I don't know." To three questions he made the same answer, but would say nothing more than "I don't know." It is believed that he will recover.

His parents stated that he had left the house just before dinner to go to one of the neighbor's to get some chicken feed. The telephone men found a tin pail in the ditch near the boy and it was empty, and so it is thought that he was on his way to the neighbor's when the accident happened. It is not known whether he was struck by an auto or whether he simply fell from his bicycle. Whatever was the cause, the results were very serious. The boy's shirt was torn and he was bleeding profusely, so it is thought that he must have been struck.

Only one car was met by the telephone men between Henderson Harbor and the scene of the accident, and that was a Ford car driven by a girl, and was seen by them near the Lansings' cottage.

"Prospect" Pleases

A PROSPECT subscriber writes:

I want in some way to express my appreciation to your company for the splendid service I have always received. I have had this telephone in my house now for two years and I have never had any cause to complain. . . . I have had a great deal of illness and next to my doctor, my telephone is my best friend.

I always receive *prompt attention*, and *great courtesy* from the operators on my line. . . . They are refined and ladylike, and never rude to me. If I could thank these "girls" myself I would be glad to.

Trusting never to be without a telephone,

Very sincerely,

MRS. ROSALIE KITTINGER.

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Hall's Tribute to the Bell System

"HOW Money Is Made in Security Investments," by Henry Hall, has been published recently in its sixth edition. Chapter VIII is devoted to Government Ownership, and in it the author says:

In another respect, Government Ownership of these great utilities would prove so disastrous that it is incredible how any man of intelligence could consider the insolent proposition for a moment. The watchword in private enterprise of every description in this country, in factories, railroads, telephone systems, telegraph offices, mercantile and all other business establishments, is efficiency in the management and efficiency in the service rendered. It is almost invidious to mention any one of our modern great corporations as typical of all in this respect; but the business world of the United States would probably select the Bell Telephone system, now concentrated in the ownership of the American Telephone & Telegraph Company, and managed by that most competent of men, Theodore N. Vail, backed by able associates, as, par excellence, the highest type of efficiency in management and service rendered in the United States. In France, where the Government has a complete monopoly of the telephone, it often requires from one to four hours to secure a long distance connection with another city. In the United States, four minutes is seldom necessary. In many countries, where the telephone is owned and operated by the government, the offices are not open all night, or indeed all day for that matter. New installations consume four weeks abroad, compared with four days here. In all countries where there is government ownership of the telephone delays, confusion, indifference and abominable mismanagement prevail to a degree that is absolutely intolerable to an American traveling abroad, accustomed as he is to the swift, satisfactory, and competent service supplied by American Telephone and Telegraph. In all of those countries official investigations have repeatedly revealed the fact that initiative and efficiency are sacrificed, at once, by government ownership; and that a service managed by public officials rapidly deteriorates, falls into a hopeless muddle, and is impossible of improvement. This is the official record. The public, in foreign lands, endure these troubles because of a supposed military necessity.

Transcontinental Demonstrations

Transcontinental Telephone Demonstration at Masonic Dinner, Masonic Temple, Newburgh, N. Y., June 20, 1916

Hudson Elks' Club

THREE hundred and twenty residents of Hudson, N. Y., enjoyed a demonstration of the Transcontinental Line on June 19, when Mr. Carroll and Mr. J. J. Malone, local commercial manager, presided over the telephone program of the Elks' Club.

Hon. William Wortman, Mayor of Hudson, was the first to speak over the wire. He was followed by Mr. Alfred A. Benson, Exalted Ruler, Hudson Lodge; Mr. Milton Van Hoesen, Hudson *Evening Register;* Hon. John C. Tracy, district attorney, Hudson County; Mr. J. Essex, Hudson *Republican;* and Mr. E. H. Lisk. A baritone solo by Mr. Frank W. Thompson, and "Hello, Hudson," by Miss Mary Newton demonstrated the powers of the Transcontinental Line to transmit music effectively.

Newburgh Masonic Lodge

AT the Masonic Temple in Newburgh, N. Y., three hundred persons were gathered on June 20, to participate, with sixty persons in San Francisco, in the demonstration of Transcontinental Telephony. Mr. Bigler, local commercial manager at Newburgh, opened the line by calling the wire chiefs in order across the continent, after Mr. Leimbach had given the address on the Triumph of Science.

Hon. B. B. Odell, Jr., ex-Governor of New York State, opened the conversations over the long line and after him the speakers were: Mr. Howard Patton, Dr. R. W. Thompson, Mr. Ira D. Minard, Mr. John E. Drew, Mr. J. W. Brundage, Hon. Jonathan D. Wilson and Mr. John Swan. Victor selections, the roar of the Pacific waves, and the Star Spangled Banner brought the program to a close amid the warmest enthusiasm. A motion of appreciation was passed by the entire company upon the suggestion that those who wished to express their acknowledgment for the instructive entertainment signify by raising the right hand.

National Association of Piano Merchants

A DEMONSTRATION of the Transcontinental Telephone was the feature of a banquet on June 21 in connection with the fifteenth annual convention of the National Association of Piano Manufacturers at the Hotel Astor, New York. About 875 prominent piano merchants from all parts of the country participated in the telephone program,

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Transcontinental Telephone Demonstration at Dinner of National Association of Piano Merchants of America, Hotel Astor, New York, June 21, 1916

which was conducted by Mr. W. F. Schmidt and Mr. G. A. Leimbach.

After the roll call of wire chiefs, Hon. Dudley Field Malone, Collector of the Port of New York, Mr. John G. Corley, president of the association, Mr. P. Clay, ex-president of the association, Mr. Percy S. Foster, Mr. Edward B. Bartlett, incoming president, and Mr. G. R. Hughes exchanged greetings with speakers in San Francisco, Mr. Hughes talking with his daughter, Miss Maxine Hughes. After the Transcontinental program, addresses were made by Hon. Dudley Field Malone, Rev. W. Warren Giles, D.D., and Major-General Leonard Wood, U.S.A.

The demonstration was received with the greatest enthusiasm, and a resolution was adopted, passing a vote of thanks for the unusual opportunity it had afforded.

New York Naval Militia

ABOUT seven hundred members and guests of the Naval Militia, New York, and the Veteran Association, 1st Battalion, N. M. N. Y., took part in a demonstration of Transcontinental Telephony on June 23, at a dinner celebrating the twenty-fifth anniversary of the organization of the Naval Militia.

Mr. Carroll and Mr. Leimbach presided over the telephone function, and the program was received with manifestations of marked interest from all. Hon. Chas. S. Whitman was the first of the speakers to use the line and was followed by Hon. Clarence J. Shearn, Justice of the Supreme Court, State of New York; Commodore Jacob W. Miller, organizer of the Naval Militia; and Commodore Robert P. Forshaw, commandant of the Naval Militia forces of the State of New York. The roar of the breakers on the shore of California and a victor record of The Star Spangled Banner were transmitted from the Pacific Coast, and the program was concluded with a roll call of wire chiefs.

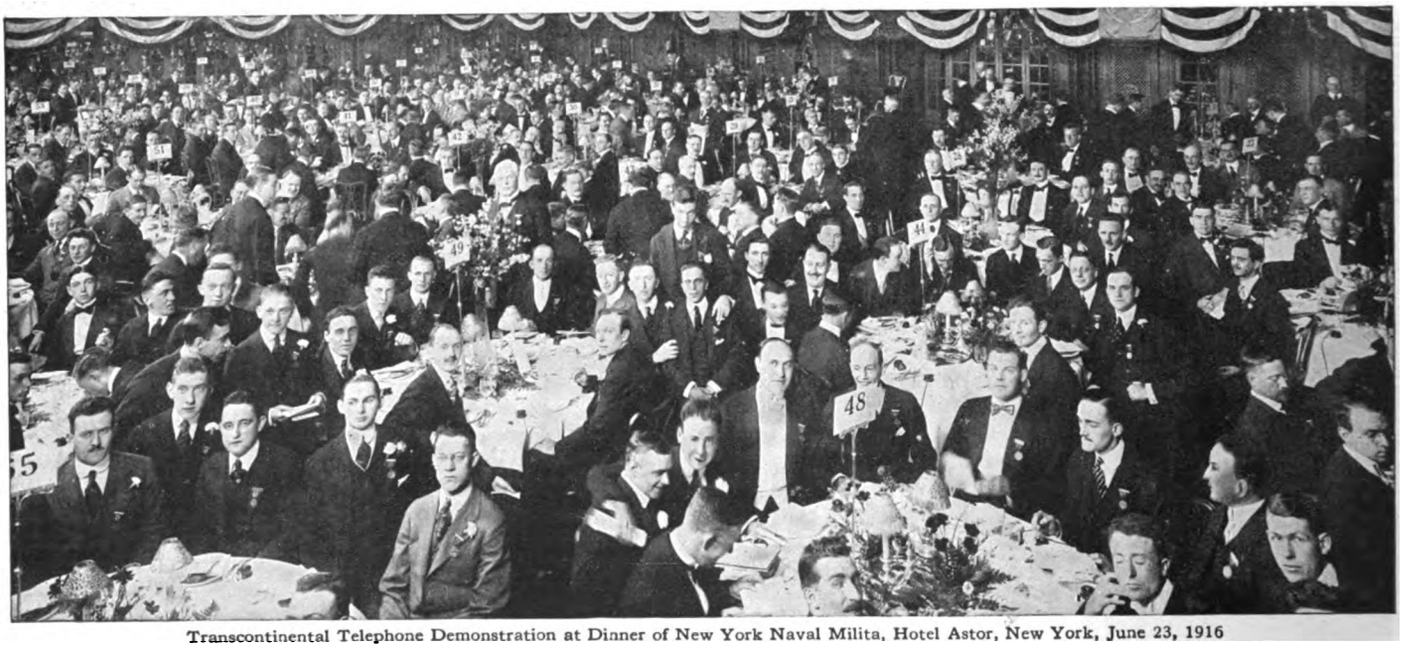
Besides Governor Whitman and Justice Shearn, the speakers of the evening were Hon. Franklin D. Roosevelt, Assistant Secretary of the Navy; Com. Robert K. Krank, U. S. N.; Mr. James Barnes, prominent publicist and explorer; Commodore Forshew of the naval militia; and Capt. Herbert L. Satterlee, president Veteran Association, 1st Battalion, N. M. N. Y.

A statement of particular interest was that of Mr. James Barnes, who said, "The telephone is the only real preparedness we have in this country."

Malone Chamber of Commerce

SAN FRANCISCO, Sacramento, and Santa Paula, Cal., were linked in conversation with citizens of Malone, N. Y., on June 29, when a Transcontinental demonstration was given before about two hundred members and guests of the Malone Chamber of Commerce.

Mr. Leimbach delivered the address on "The Triumph of Science," and Mr. George Calkins, local manager of the Mountain Home Telephone Company, at Malone, presided over the wire. Those who spoke with the California cities were: Mr. F. H. Bryant, president of the Chamber of Commerce, Malone; Mr. A. A. Edwards, president of Malone Village; Mr. F. R. Kirk; Mr. W. F. Hutchins, who spoke with Hon. H. Johnson, Governor of California, in Sacramento; Mr. Lansing Donaldson and Mr. J. P. Boylan.



Transcontinental Telephone Demonstration at Dinner of New York Naval Milita, Hotel Astor, New York, June 23, 1916

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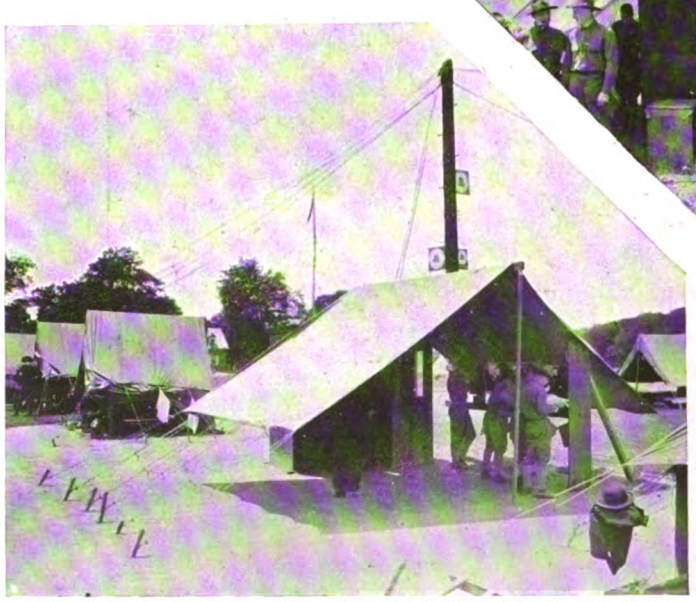
First Field Artillery. Rear View of Telephone Tent and Three Booths Beside It, Providing in All Eight Coin Box Public Telephones

Second Field Artillery. Telephones in Use. The Next Day the Number of Instruments Was Increased to Eight.

First Field Artillery. Front View of Telephone Accommodations

To the Left (diamond picture)—Nine Coin Box Telephones of Squadron "A" and First Cavalry All in Use and Six Men Waiting.



Shelter Tent Provided by Chaplain of Second Artillery Showing Coin Boxes

General View of Booths and Tent, N. Y. Telephone Company Car, and of Camp

SCENES AT VAN CORTLANDT PARK

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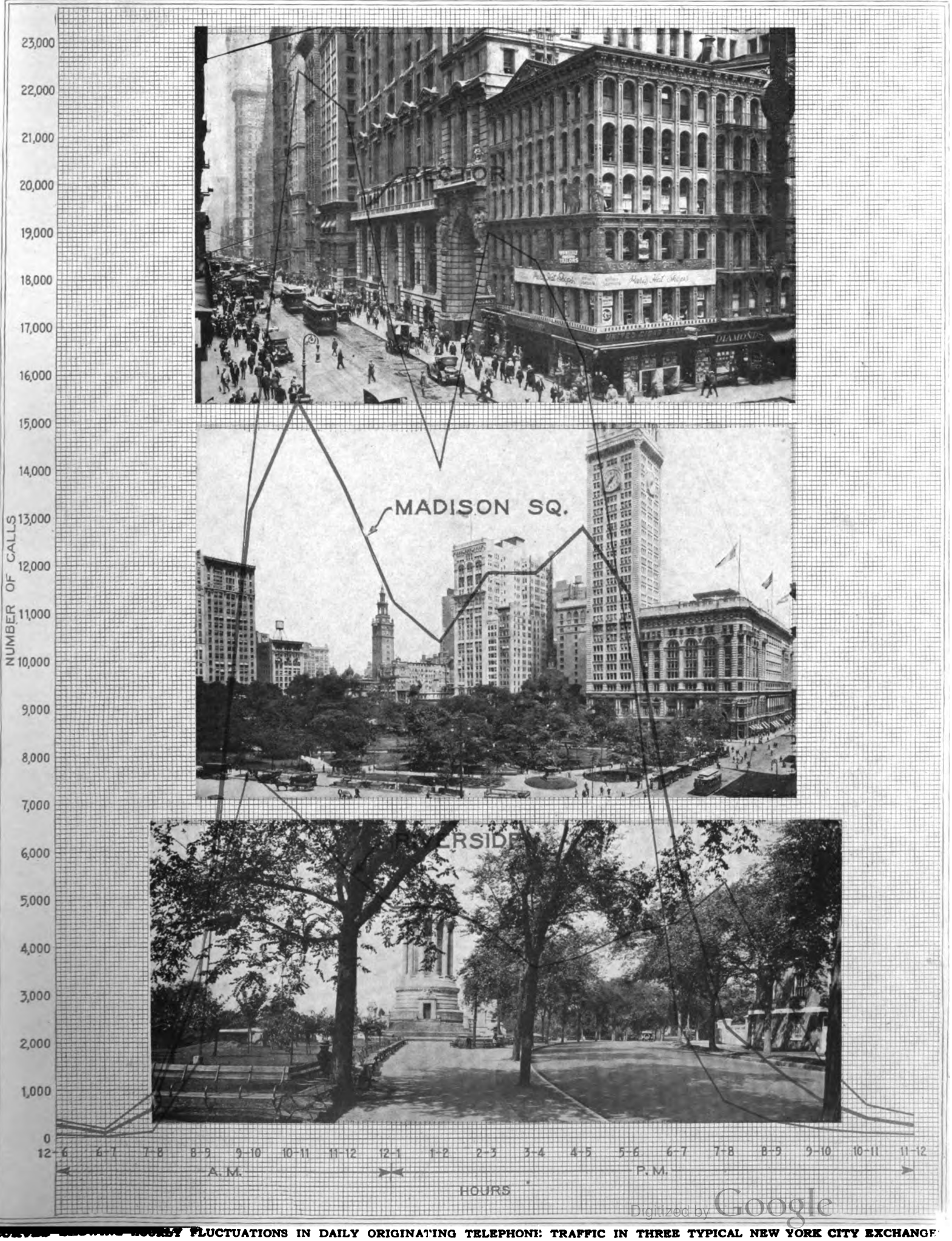
·The TELEPHONE·REVIEW·

Vol. 7, No. 9 SEPTEMBER, 1916



CURVES SHOWING HOURLY FLUCTUATIONS IN DAILY ORIGINATING TELEPHONE TRAFFIC IN THREE TYPICAL NEW YORK CITY EXCHANGES

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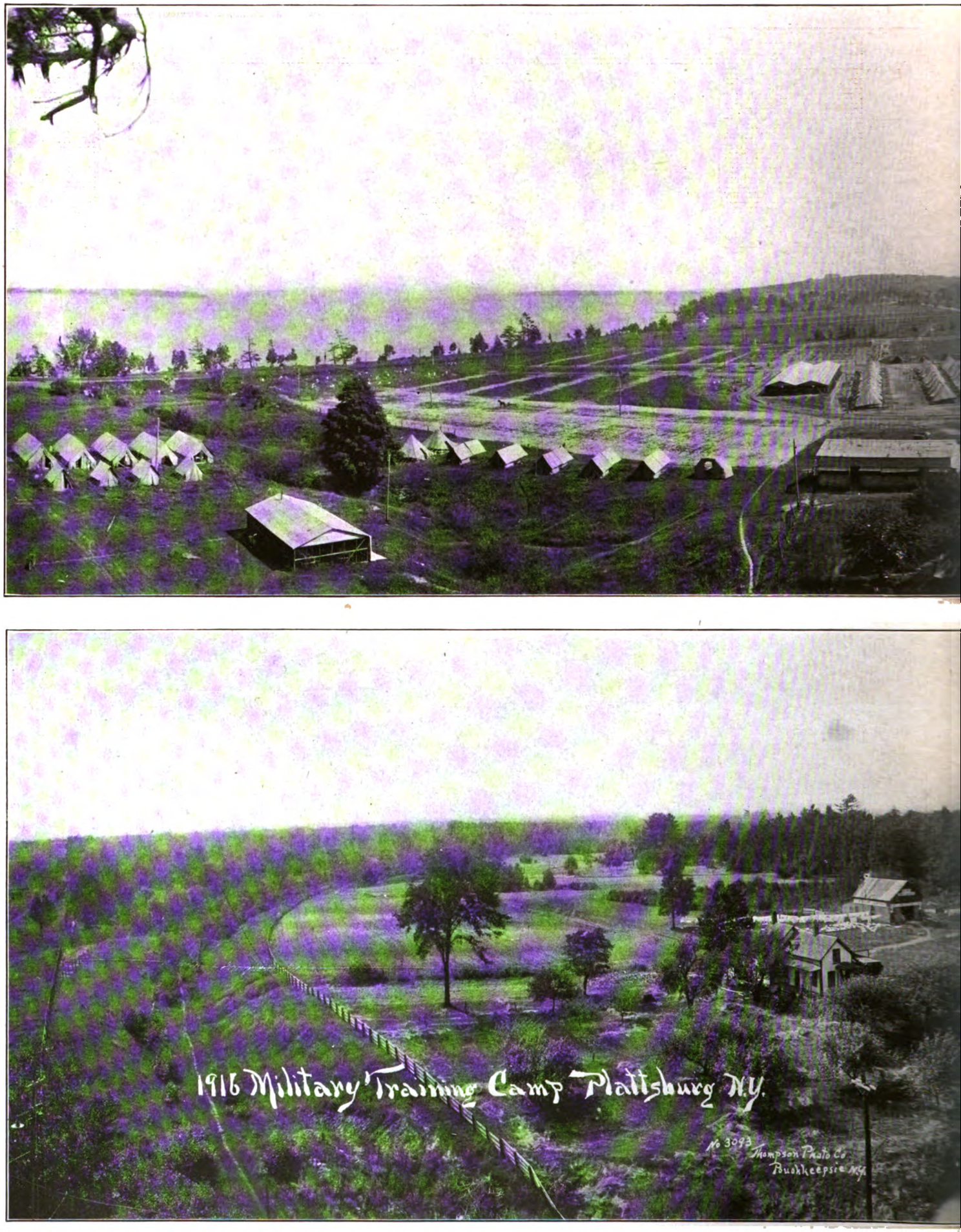

Panoramic View of 1916 Military Training Camp, Plattsbur

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The TELEPHONE REVIEW

New York September 1916

VOLUME 7 NUMBER 9

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

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VOL. VII. SEPTEMBER, 1916 No. 9

Covers and Contributions

THE variations in telephone traffic in Manhattan are graphically shown on our front cover this month. There is also another demonstration afforded by this use of photographs and curves that is equally interesting, and that is the substitution of telephone geography for physical geography when communication between human beings is a necessity.

Riverside is busiest from 9 to 10 o'clock, and Madison Square and Rector from 10 to 11 o'clock, both A.M. Rector drops from 22,400 calls an hour in the forenoon to 14,000 between 1 and 2 o'clock, but jumps again to 19,000 between 2 and 3 o'clock P.M., after which there is a steady decline until there are only 2,400 calls between 6 and 7 o'clock, and 700 between 7 and 8; then until next morning there is hardly more business than in the smallest country exchange.

Madison Square gets up to 13,000 between 9 and 10 A.M., when Riverside is at its peak of 7,700, but its low day-load is between 1 and 2, while Riverside does not reach its until between 3 and 4 P.M. Madison Square reaches its second peak from 4 to 5, and Riverside from 7 to 8. For the rest of the twenty-four hours Riverside is busiest, there being several hundred calls an hour all night long.

A CALL from or to any one of these exchanges may be as important as from or to any other one; it may be from or to a point as far distant, and there is no difference in the quality of the service given—universally admitted to be the "best in the world"—morning, noon, or night. All over the country these messages come and go—personal conversations, two party talks, not merely outgoing or incoming dispatches — from coast to coast, from the Canadian border, even across it into the Dominion, to the Mexican frontier.

AN interesting description of the Madison Square commercial district, written by Mr. Reese, the local commercial manager, is printed in this magazine.

It is followed by an article describing the Wayne Telephone Company, which operates in Newark, New York, and contiguous territory, and that article is followed by one describing the J. M. Ackley Telephone Company, which is entirely rural.

Every line, station, and other piece of equipment; every operator, clerk, plant man or official; every subscriber, and every telephone call, is equally as important a part of the service in one place as in another, and the same spirit of service which is the special characteristic of Bell System employees is found everywhere.

THE printing of these three articles in this issue of our magazine is for the purpose of broadening our conception of the wonderful work we are doing, whatever our particular jobs may be, for each of us is contributing something to the prosperity, the security, the happiness of millions who by means of the telephone service of the Bell System have been bound into a united nation.

THE picture which occupied our cover page last month was an actual scene in broad daylight upon Seventh avenue, New York. From one end of Manhattan to the other the streets for some time past have been in a state more or less similar, as described in Mr. Hartley's article on the "Electrical Subway Problems Raised by Rapid Transit Subway Construction in New York City," the last installment of which appears in this issue of our magazine.

Some day the surface of these streets will be restored to travel, but all the while sub-surface traffic has been going on without interruption—millions of trips being made along the telephone wires in the cables which have undergone an experience unequaled by any telephone plant in the world.

The conditions and the work involved will be historic, and the experience gained by our people will be a precedent for all time.

This article by Mr. Hartley is a distinct contribution to scientific knowledge on the subject.

IT has been suggested to us that in all parts of our territory there are working conditions—plant, traffic, commercial, and accounting—full of interest and action, which if photographed at the right moment and sent to us would make equally good covers for our magazine.

Such pictures would be gladly welcomed, and perhaps, if you have a camera, you can send in such contributions as this, even if you can't write an article as Mr. Hartley and some others have done. If you haven't a camera, but know of an interesting picture that could be taken, there is always someone in your department who can arrange for the picture to be made.

SOME time ago we received a photograph of an office interior. Every clerk and official had been shooed out for the picture to be taken. It wasn't an office at all, only a lot of furniture and things. So we requested that a new photograph be taken.

The point of this is, get a picture of the actual working conditions, including the "gallery," if there should be an audience on the job. It is better to show a cat or a dog, or both, running across the street, than merely a street scene without life, and always a pretty girl helps if she belongs there.

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Comparative Results

SOME people must have colossal nerve to imagine (if they do) that they possess such personal qualities that they are irresistible. If they knew the opinions they create they would desire to hide their diminished heads and resort to the telephone immediately.

Anyone who finds that it is more difficult to do business by telephone than by a personal call will probably discover upon a little self-analysis, that this is because he finds it more difficult to be really courteous than superficially so.

Writers for the public press and the magazines in discussing courtesy are unanimous in attributing to the telephone the great and noticeable increase in business amenities which have followed the wider use of the telephone for business purposes. The necessity for courtesy over the telephone has had the effect of developing courtesy as a state of mind. The telephone, therefore, may be termed a symbol of courtesy and should be a constant reminder of it whenever used.

A man will scarcely blame himself for the failure of a business visit, but he will be sure to blame the telephone for the failure of a telephone conversation, whereas many a time the failure of a personal visit is due to the personality of the caller, and the failure of a telephone call is due to purely business reasons which no personal visit could have altered, or to lack of ability in presenting a proposition. This lack of ability would have been as much or more apparent in a personal interview.

Of course samples cannot be shown by telephone, and many other things require personal interviews, but as a rule whatever can be done either by telephone or personal interviews, can be done best by telephone.

The Sanction of the Church

JUST after I had mentioned the humor of the Bishop of Oxford, I came across the latest proof of it in the columns of the *Church Family Newspaper*. It was he who, with a mixture of jest and earnest, suggested a new question for self-examination: "Have I been quite kind to the telephone?" The remark was quoted by the Bishop of Stepney (Dr. Paget) at a meeting of the British Columbia Church Aid Association. "We are apt," said Dr. Paget, "to forget that there's a human being at the other end of the wire. One lady I know has in all reverence written the words, 'Blessed are the meek,' on her telephone card; and a man of my acquaintance (and perhaps men need the reminder more than ladies) has hung above his the words, 'Always remember to say *please*.'"—*The Churchman.*

About Thinking

IF it is for want of thinking that most men are undone, what is to be gained by thinking?

The answer is the same as Mr. Robb gave one day, by the Scotch way of asking another question. He said, "Tell me, how long is a string?—It all depends!"

Thoughtlessness certainly never benefits a man; thinking helps in proportion as it is intelligent. Thoughts are the fruits of thinking. To find out how intelligent a person's thinking is find out what his thoughts are. "Figs and thistles," you know. There are degrees of intelligence, just as some thoughts are greater than others.

Thousands of students came out of school and college last June with the most wonderful thoughts as the result of their immature thinking. They may have burned the midnight incandescent thinking hard upon the problems of the universe, but the test will come when they tackle this work-a-day world.

So it is in the school of experience—we get out of our thinking what we put into it, and the value of our thoughts is tested when we translate them into action.

W. R. Patterson

MR. W. R. PATTERSON, one of the makers of early Western Electric history, and widely known among telephone people as the originator of the lead sheath cable, died at his home in Chicago on July 19.

"Patterson" cable, the name by which lead sheath cable was known for many years, is to-day used exclusively for underground telephone work; in fact, for all cable work in the telephone business. When the electric and telephone industries were young, the difficulties encountered in the design and manufacture of cable were legion. Mr. Patterson was finally assigned to the task of surmounting these obstacles, and the years of experience and experiment which he devoted to it resulted in the development of the lead covered cable. The invention of this solution of the cable problem, however, was only a part of Mr. Patterson's contribution to the development of cable efficiency—he not only invented the cable but superintended its manufacture and looked after its installation, until the cable business was thoroughly on its feet and the first strides had been taken toward the present extensive use of the perfected cable.

The miles of cable which to-day form the sinews of our plant throughout the country attest more impressively than any verbal tribute could do the debt which the telephone world owes to Mr. Patterson.

The Boys at the Border

A FELLOW-EMPLOYEE who is a non-commissioned officer of the National Guard now on duty on the Mexican frontier, has written us a letter in which he says:

> Down here in this God-forsaken country a man is so far out of the way of things that he's not apt to let a chance go by to keep in touch with God's country. That's why I'm going to ask you to send me the July and August numbers of THE TELEPHONE REVIEW, and put me on the list for future issues. There are about half a dozen telephone men here [referring to his camp] and you may be sure that they will be glad to get the news from the telephone world.
>
> This is certainly the devil's country. The toads have horns, the lizzards have horns, the beetles have horns, and even Texas cattle have an inch or two of horn added on for good measure. I imagine Old Nick himself is hanging around pretty close.
>
> Please remember me to everyone.

Aside from the left-handed compliment he pays us in stating his reason for asking that our magazine be sent to him, our correspondent's letter interests us very much. It suggests the thought that many of us know some of the several hundred New York Telephone men who have gone to the front, and perhaps a letter or picture postal and a copy of the home paper occasionally would do a great deal toward cheering them up while they are away.

Romance and the Telephone

Again the long distance telephone has figured prominently in the lives of man and woman. St. Louis recently completed a call from a young man there to his school-day sweetheart in Los Angeles, Cal. The call resulted in a proposal of marriage and acceptance; a further demonstration of the annihilation of distance, even in love-making. At the conclusion of this conversation the man made the remark to the operator that he had accomplished more in seven minutes of conversation over the telephone than he had in five years previous wooing. Thus there is nothing the telephone cannot do.—*Long Lines Traffic Doings, August.*

This is another evidence of what we have always contended, that what cannot be accomplished in person can often be done by telephone. This applies to business as well as to courting.

A colored subscriber at St. Joseph, Mo., called the testboard: "Hello, is this the chief wire? Well, say, I want you-all to come right up and fix my 'fome; it ain't spoke a word since Saturday!"—*Southwestern News.*

Our duty is to be useful, not according to our desires, but according to our powers.

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The Madison Square Local Commercial District

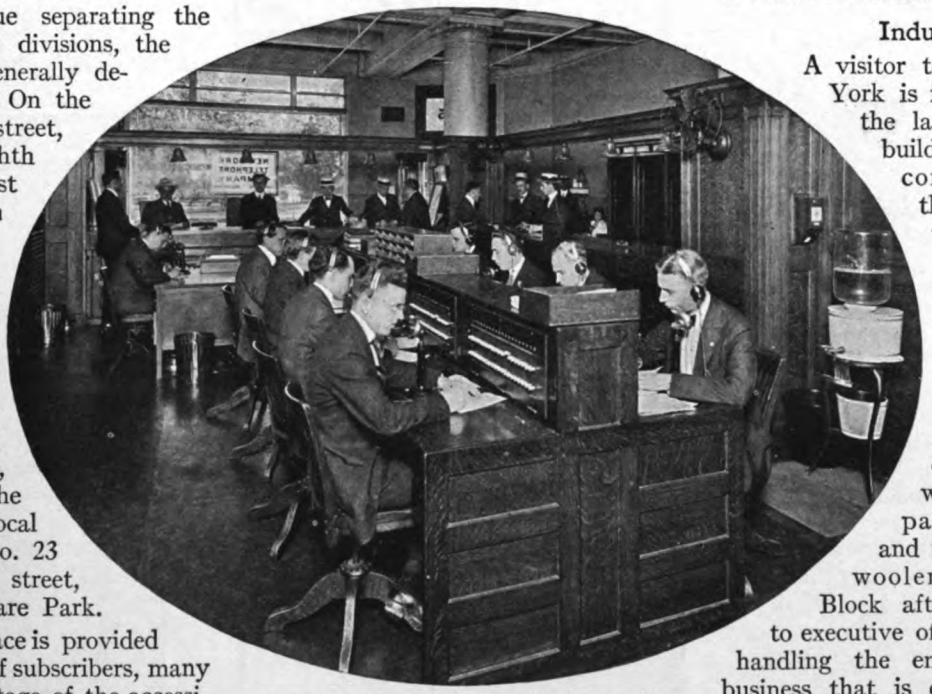
By William F. Reese, Local Commercial Manager

THE Madison Square Commercial District may be termed the southern end of the "Midtown" section of the Borough of Manhattan in New York City.

With Fifth avenue separating the eastern and western divisions, the boundaries may be generally described as follows: On the north, Thirty-third street, on the south, Eighth street, with the East River as the eastern barrier and the North River as the western.

All commercial business for the Company, served by the Chelsea, Stuyvesant, Gramercy, Madison Square, and Farragut exchanges, is taken care of by the Madison Square Local Office, located at No. 23 East Twenty-sixth street, facing Madison Square Park.

Ample counter space is provided for the convenience of subscribers, many of whom take advantage of the accessibility of the office, calling personally to sign applications for service, attend to the payment of bills, and all other commercial matters. For the increasing number of subscribers who are using the satisfactory time and labor-saving means of transacting business by telephone an eight-position desk agents' "Telephone Table" is provided.



Behind the Counter in the Madison Square Commercial Office, showing eight-position telephone table for desk agents.

Approximately 20,000 accounts are handled, covering 29,350 lines and 65,375 stations, by 46 employees. The development of the private branch exchange phase of the business represents about 56 per cent. of the total number of lines and stations in service.

Industries

A visitor to this part of New York is impressed chiefly by the large number of loft buildings occupied by concerns engaged in the manufacture of women's outer garments. Well may this district be called the Mecca of this industry.

The headquarters of the textile interests in this country have likewise centralized here, particularly carpets, and piece goods in silks, woolens, and worsteds. Block after block is devoted to executive offices and salesrooms handling the enormous amount of business that is done here in these textiles.

As a matter of course, the usual and necessary resident buyers, who represent every dry goods and department store of importance in the United States, have

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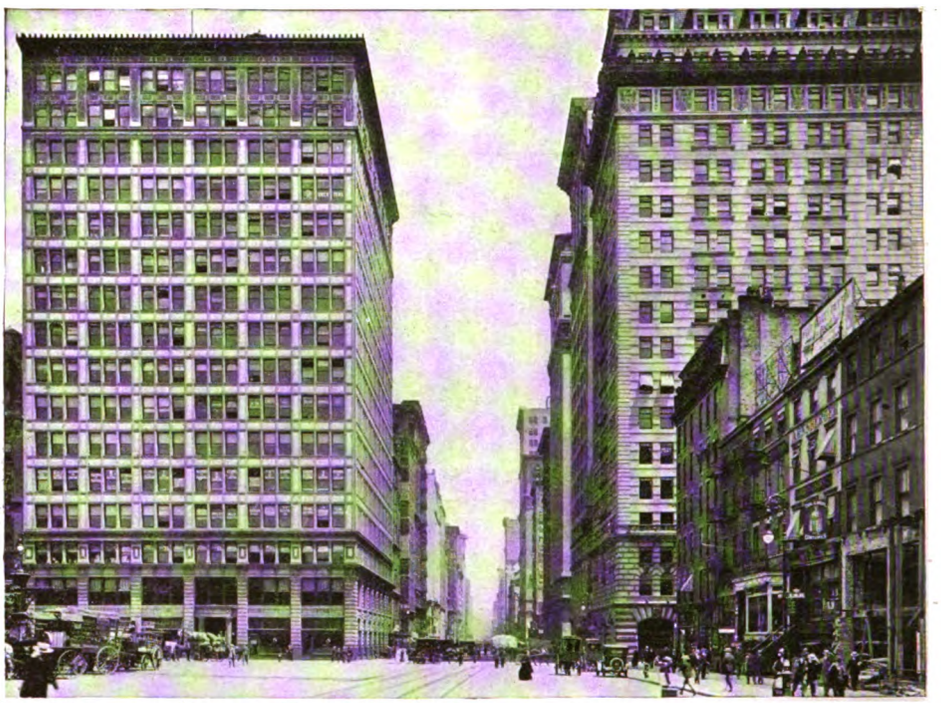
followed and settled in this immediate vicinity.

Among other distinctive business establishments may be mentioned headquarters for the following industries: the largest tobacco manufacturing company, one of the largest chains of cigar stores in the country, similar chains of drug stores, Eastern offices for the Western provision houses, one of the largest biscuit concerns, grocery and food product distributors, a large confectionery house, and an elevator manufacturing plant, not forgetting the Eastern headquarters of our friends, the Western Electric Company.

Within this district may be found also the West Washington Market, largely devoted to the wholesale distribution of poultry. In the large open space in front of it may be seen, any night after ten o'clock, the wagons from the many truck farms within a radius of twenty miles from the city, laden with farm products, which are distributed direct to dealers during the night.



Looking Up Fourth Avenue, Through the Heart of the Publishing and Textile Districts

Great Piers Along the North River, Where the Largest Transatlantic Liners Come In

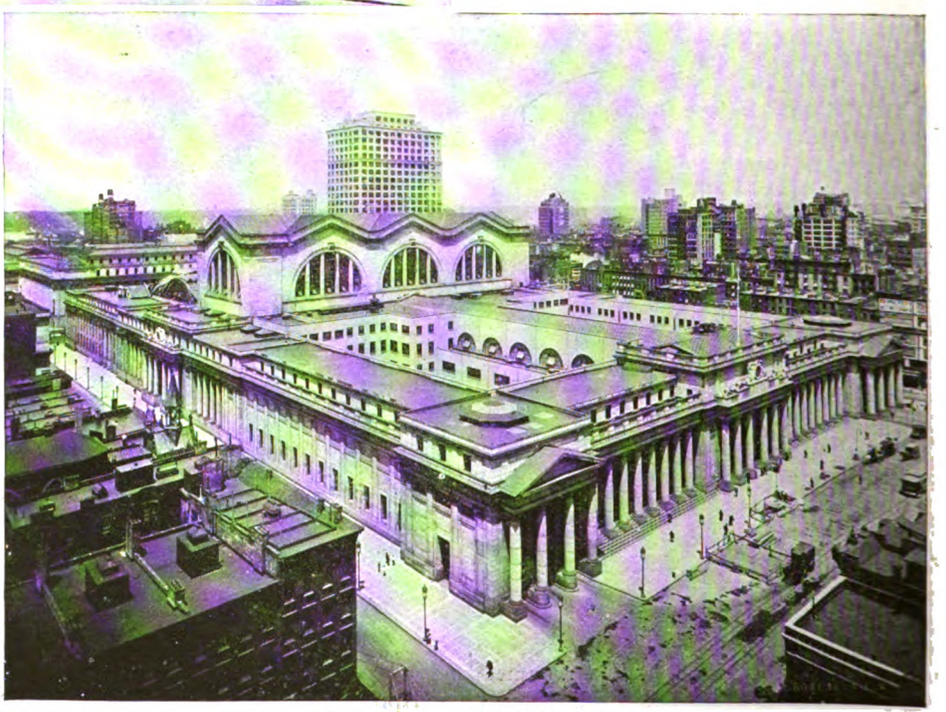
The large shipping interests along both river fronts, particularly the North River, where the piers of many of the ocean-going and coastwise passenger lines are located, are worthy of note.

Religious Headquarters

Here also the larger religious denominations of the world have established executive and missionary headquarters, and among these the visitor will find the General Theological Seminary of the Protestant Episcopal Church, the National and City Headquarters of the Young Men's Christian Association, the Salvation Army, and the large Catholic College of St. Francis Xavier.

Hospitals

This district has sometimes been called the "Hospital District," for within its confines are found such well-known institutions as the New York Hospital, Bellevue, Eye and Ear, Post-



Pennsylvania Railroad Terminal

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Broadway, Looking North from Twenty-second Street, Showing the Flatiron Building in the Foreground and the Fifth Avenue Building Just Beyond, on the Site of the Old Fifth Avenue Hotel.

Graduate, Lying-in, Willard Parker, and Scarlet Fever and Diphtheria Hospitals. As may be expected in such a field, medical and surgical colleges have followed, such as Cornell, City Medical University, Bellevue, and New York Dental.

Railroad Terminal

One feature of this district is the location, in its upper northwestern end, of the great passenger terminal of the Pennsylvania Railroad system. Electric passenger trains enter from Long Island via the Steinway Tubes under the East River, and trains from the West and New Jersey suburbs are met outside of Newark by electric engines and drawn to the terminal through the Pennsylvania tubes under the North River.

The Passing of Old New York

Such vast business interests have not centered within this territory without some sacrifices, as is evidenced by the almost total disappearance of the many, and in some cases, exclusive, residential sections. As an illustration, the gradual breaking up of the old Chelsea Village neighborhood will be noticed, only a few of the old residential blocks remaining intact, and what is left of the old lower Fifth avenue section is hedged in by tall office buildings. The Gramercy Park section, while bounded on the west by a solid wall of office and loft buildings, has thus far withstood the onslaught of business. The exception, however, is found in the Stuyvesant Park section, few changes of any consequence having occurred in that locality during the past few years.

Looking Up Fifth Avenue from Washington Arch, Past Two of the Famous New York Residences of Washington Square North.

West Washington Market

Perhaps the greatest change will be noticed in the character of the old Fourth avenue and Madison Square residential sections, while the Madison avenue section with its exclusive brownstone houses is fast becoming a business center. Union Square was the first locality to feel the change, and then in

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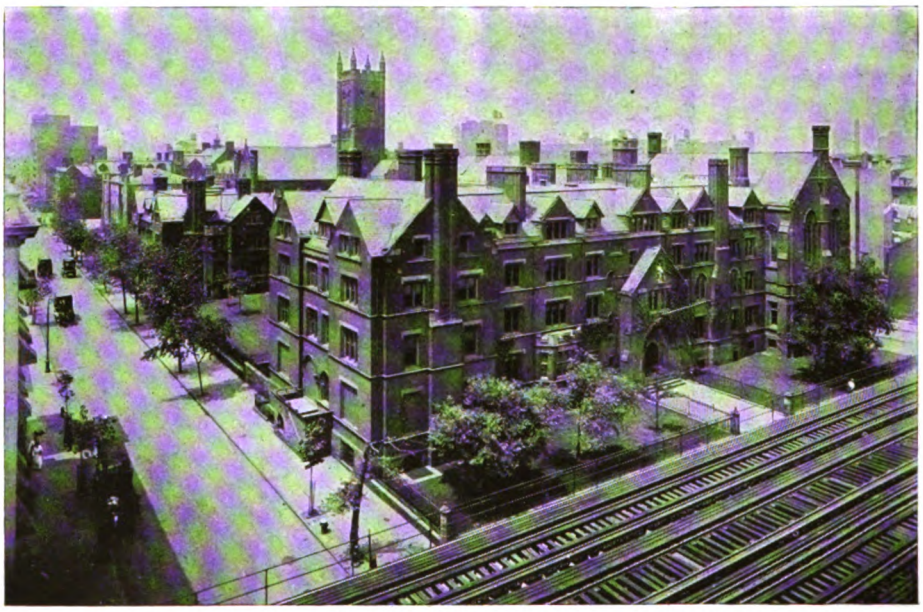
quick succession Fourth avenue, Madison Square and Madison avenue have been transformed, all within the past decade.

With the disintegration of these residential localities there also followed the disappearance of many of the older hotels, such famous hostelries as the Everett House, Fifth Avenue Hotel, Victoria and Hoffman House, now being replaced by imposing office buildings. There still remain, however, a number of the large hotels, mainly devoted to the accommodation of commercial and transient guests.

Gramercy Park

The constant transformation of the Madison Square district has also brought with it the elimination of the section contiguous to Sixth avenue from Fourteenth street on the south to Twenty-third street on the north as the old aristocratic shopping center. Nowhere has the ever changing hand of the years been laid more heavily than upon the district, which but a short time ago was the rendezvous of shoppers, a veritable world of department stores and shops of every description. To-day only a few of the largest establishments remain, and there are blocks and blocks which formerly invited the élite of New York and all the suburbs, that now present only a dreary succession of loft buildings, empty shells of their former busy selves, filling again with industries of a drab and far different nature.

The theaters, too, have moved uptown, and no longer do the streets of the Madison Square district resound with the gayety of theater and supper parties. With the exception of Madison Square Garden all of the old-time and famous playhouses have disappeared from this locality, and most of the larger restaurants have followed also.



General Theological Seminary

Opportunities

But although much of the pleasure of the city has thus turned its back upon the more downtown sections, as Madison Square has now indeed become, the business activity which has grown into the spaces thus made available is indeed encouraging and furnishes the best possible field for an ever increasing telephone development.

Ammunition for Our Commercial Men

ANOTHER instance of the speed and cheapness of telephone salesmanship, in contrast to the traveling method, is described by Mr. E. R. Stonaker, superintendent of traffic of the Mountain Home Telephone Company.

Mr. John L. Peoble, a salesman of the American Steel and Wire Company, filed over thirty toll calls at Saranac Lake on July 22, for points within a radius of fifty miles. Twenty-five of the calls were completed that day, the rest requiring appointments for future dates, as the called parties were not in.

An interview with Mr. Peoble elicited the information that the American Steel and Wire Company was conducting a special telephone campaign, and he had made a series of calls similar to those from Saranac Lake, from various centrally located towns and cities throughout the Hudson Division of the New York Telephone Company, and the territory of the Mountain Home Telephone Company. The time consumed in this campaign was only five days, and the total expense involved, including telephone tolls, was seventy-five dollars. Of this only about thirty dollars were spent in telephoning.

As against this actual expenditure of time and money, Mr. Peoble stated that had he conducted the campaign through personal calls and interviews, the time consumed would have been at least three weeks—probably more—and the expense would have been something over one hundred and fifty dollars. To this satisfying economy of time and money was added the fact, expressly stated by Mr. Peoble, that fully as much business was closed over the telephone as would have been had personal interviews been made.

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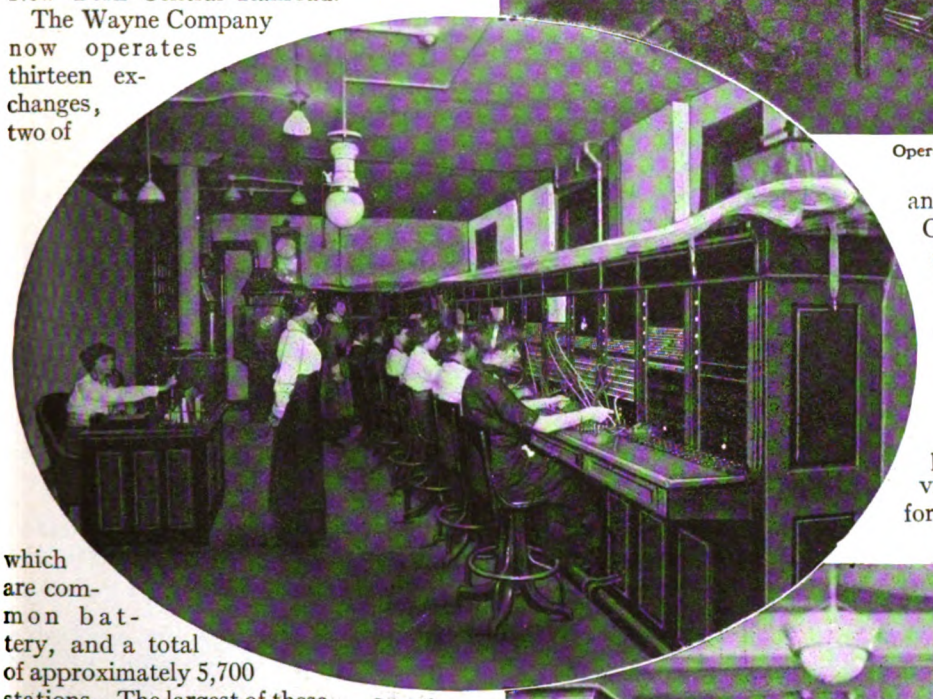
The Wayne Telephone Company, Newark, N. Y.

By E. A. Coney, Division Equipment Engineering Department, Syracuse, N. Y.

AT one time there were three telephone companies operating in Wayne County, the Wayne-Monroe Company, the Wayne County Telephone Company, and the New York Telephone Company. The properties of these companies were consolidated and a new company organized, known as the Wayne Telephone Company, now operating all the telephone plant in Wayne County. Headquarters are at Newark, N. Y., a prosperous town of 7,000 population, located in the southern part of the county near the center of an extensive fruit belt, and on the main line of the New York Central Railroad.

Operators' Sitting Room, Newark, N. Y.

The Wayne Company now operates thirteen exchanges, two of which are common battery, and a total of approximately 5,700 stations. The largest of these exchanges is Newark, with over 1,100 stations. Due to increased business, it was found that the general offices and exchange quarters in Newark were inadequate. The offices were located in several buildings throughout the town; therefore, a long term lease was obtained on the old Post Office, which was renamed the Telephone Building. This was remodeled to accommodate central office equipment, general offices, and storeroom.



Operating Room

It was decided to rebuild the outside plant completely, to install modern central office equipment, and move the general offices to the new location.

Early in 1914, specifications were prepared by the New York Telephone Company's Central Division Engineering Department, the necessary material ordered to rebuild the outside plant, and an order was placed with the Western Electric Company for No. 10 central office equipment. Accordingly, about 2,000 feet of subway were laid, 4,000 feet of underground feeder cable, 25,000 feet of aerial distributing cables were drawn in and spliced, interior block construction in three of the principal business blocks, 225 poles and 210 additional cable terminals were placed. Heavy gauge conductors were provided in certain of the underground cables for bringing the toll lines into the central

Newark, N. Y., Commercial Office

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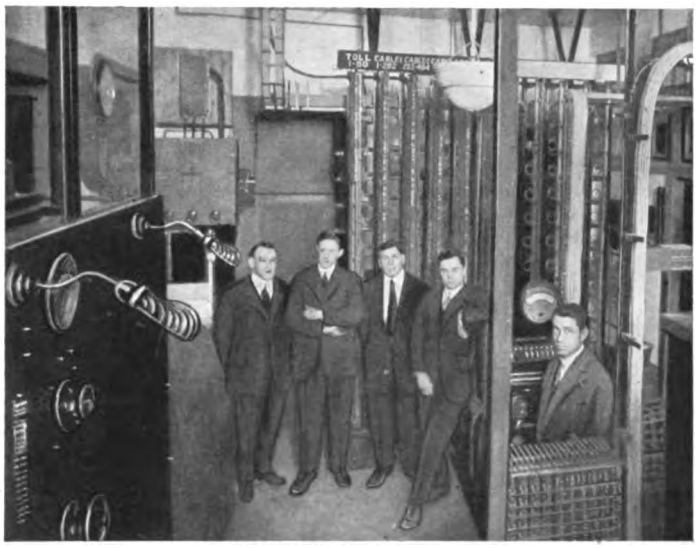
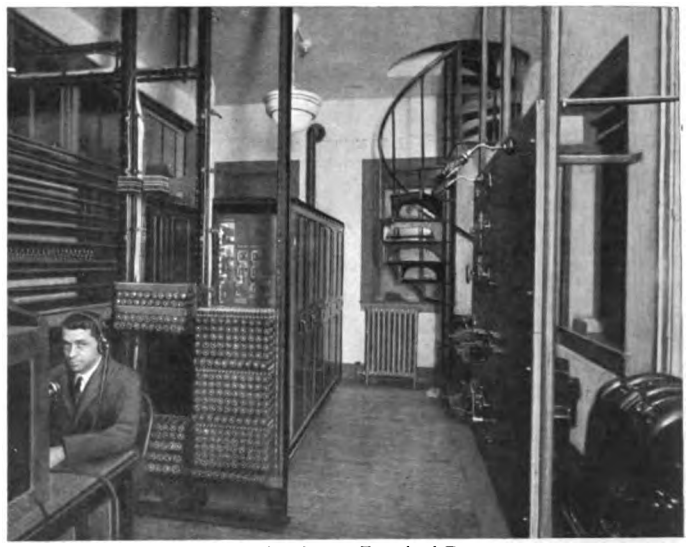


Terminal Room and the Men Who Reign There, Newark Exchange



Another View in the Terminal Room

office, thereby improving the transmission.

The central office equipment is the standard No. 10 type such as is provided for the New York Telephone Company, with capacity for 18 sections, and initial equipment of 10 sections—made up of one testing position, one blank position, four toll positions, one rural line position, three subscriber positions—600 subscriber lines, 40 toll lines, chief operator's desk, and combined wire chief's desk and toll test panel, together with the power plant and terminal equipment..

Superimposed ringing is employed for ringing the subscribers' stations, current being supplied from two No. 84 type interrupters and dry cells. Provision is made for ringing machines at a later date, if it is found that they are required.

The operating room, retiring room, and locker room are located on the second floor. The terminal room, power plant, etc., are located in the rear on the first floor. A winding stairway was installed between the terminal room and the operating room as a matter of convenience.

The old central office equipment consisted of Western Electric Company's No. 8 switchboard located about two blocks from the present central office.

All lines were cut into the new board on December 28, 1914, at 4 P.M., and no trouble was experienced with the operation of the new plant.

The entire reconstruction of the outside plant and the remodeling of the building was handled by the Wayne Company's local forces and gives Newark one of the most up-to-date telephone plants in the State.

Modern Telephoning

How the Remington Typewriter Company Serves Itself and the Public by Up-to-Date Telephone Usage

ANOTHER big business organization, the Remington Typewriter Company, has placed itself among the enterprising, far-sighted firms which realize that efficient, courteous use of their telephones will help them in their relations with the public and in the conduct of business inside their organizations.

The Remington company made an extensive study of its telephone equipment and the prevailing methods of making and receiving telephone calls throughout the organization. At the conclusion of this study, which was assisted by telephone men, Vice-President A. A. Forrest of the Remington company issued a list of instructions for the use of the telephone by Remington employees. These instructions read as follows:

In view of the fact that improved telephone service will greatly facilitate the commercial transactions of this company, it has been deemed advisable to establish a definite method of handling telephone calls, and you are respectfully requested to observe the following rules.

The Remington Typewriter Company prides itself on service rendered to the public. Let us, therefore, extend this policy and by observance of these rules render service to ourselves.

Outgoing Calls:

Call by number, instead of by name. If this is not done, the work of the operator is greatly increased and it deprives others of immediate service. In calling a number say, for example, "Rector 4980," not "I want Rector 4980." Every additional word on the telephone takes time, and when multiplied by the number of extensions in our office, the waste may be excessive.

Hold your line until you are connected or until you receive a definite report from the operator, except in the case of long distance calls. This is a courtesy to the person called. Nothing is more aggravating than to be called and then have to await the convenience of the caller.

Please consider the value of *personal calls* before making them. They take up as much time as those for regular business and we therefore ask that all unnecessary personal calls be discontinued.

To attract the attention of the operator move the receiver hook up and down slowly; rapid and violent moving of the hook is hard on the ear of the operator.

Incoming Calls:

When your telephone rings, *answer it immediately.* This releases the operator for other service. When answering the telephone say, "Mr. ——— speaking." This saves time.

When passing a telephone which is ringing and there is no one there to answer it, take up the receiver and say "——— Department (or Mr. ———'s desk); is there any message?"

Do not expect the operator to make appointments for you nor to do any other service than that for which she is actually employed, *i.e.*, to efficiently operate a switchboard.

Inside Calls:

Call by name.

Hold your line until you are connected or until you receive a definite report from the operator.

Do not engage the operator in conversation over the wire or at the switchboard during office hours.

Answer your telephone promptly.

Call by number.

Hold your line until you are connected.

That the foregoing rules are productive of excellent results is shown by the following letter, which the Remington people sent to the Telephone Company three weeks after the telephone instructions had been put into effect:

We wish to thank you for the data you furnished us in connection with our telephone service and inclose two copies of the instructions which have been issued to our employees. These have already improved our telephone service immensely.

The equipment of the Remington Typewriter Company in its New York office consists of a three-position switchboard, 23 lines, and 91 extensions, using 106,500 messages.

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The J. M. Ackley Telephone Company

By One of the "Original Six"

A Busy Day in Summer. Exchange Is First Building on Reader's Left

A Wintry View of the "Y" Shaped Valley of Leon

IN the extreme west boundary of the county of Cattaraugus, in the western part of the State of New York, nestled quietly among the hills and valleys, in a "Y" shaped basin, lies the little hamlet of Leon. It is fifty-five miles south of Buffalo, and eighteen miles to the north of the busy city of Jamestown. A State improved highway runs through the heart of the town, and

THE "ORIGINAL SIX"

Left to right: Sec. and Supt. J. M. Ackley, M. W. Cooper, Engineer W. A. Marsh, Pres. W. H. Eldredge, Engineer C. E. Eldredge, and D. F. Greeley.

facilities that go to make the busy town and enter into the busy life.

It was such conditions that prompted six of our citizens to undertake the building of a telephone line, and hence at the close of one stormy day along in the month of November, 1903, the first line, two and one-half miles in length, was completed and put in commission, and it was then that the New York Telephone Company, the American Telephone and Telegraph Company, and the John M. Ackley Telephone Company, as well as the stately stage coach, are the principal and most important thoroughfares that take us out into the world over the edge of the basin. In the winter we are snug and warm, and well protected from the blasts and winds that sweep over the land, and the summer heat is tempered by the surrounding hills.

Twelve years ago, at the time our story begins, we had only a toll station, no local or exchange lines, no State road, and no industry of any importance, but the stage was here and had been since time began, to serve our needs and take our messages out into the world beyond. We were a cross-roads on the map. A rural community of one of the best farming sections in the State, yet hampered by environment, and remote from those

Supt. Ackley and Engineer Eldredge Plan Some Cable Changes in Leon

Engineer Eldredge, Supt. Ackley, Pres. Eldredge, and Operators H. H. Ackley and Miss Inez Ackley

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the "original six" became united as one by the telephone. It was dubbed and called the "beanpole line," a plaything, and other pet names, but it served its purpose well and stands to-day as a monument to what enterprise and thrift can accomplish when put to the test.

The winter was a hard one and the little telephone line came in to do its part in relief, and furnished recreation and cheer to the "housed in" that winter. It was called a plaything at the start, but when the winter was over there were others who wanted "playthings" and were clamoring for the telephone. So the seed was sown by that little band of six, it had taken root, and the fruit was budding very prolifically, for the demand came full and strong for more telephones.

It was then that the "original six" effected their first organization, known as the Mutual Telephone Association, and proceeded to get in line, for the drift of sentiment was for telephones. Be it "beanpole or plaything," a telephone we must have, and hence we see the "original six" electing their officers and making their first settlement. These officers were President J. M. Ackley, Vice-President M. W. Cooper, Secretary W. H. Eldredge, Engineer C. E. Eldredge, and Construction Artists W. A. Marsh and D. F. Greeley, and they are seen in the illustration paying the price of the first construction, $21 each over to Vice-President Cooper, who had acted in the capacity of purchasing agent for the first telephone line.

The grounded line was two and one-half miles long and a success, and why not continue such construction, even if our engineer did favor other and perhaps better methods of construction? What we had was good, could not work better, and served every purpose demanded, was quiet in its working (unusual for a grounded circuit), was economical to build, easy to keep in condition, and what more could be asked or expected of the telephone?

A central exchange was planned by Engineer Eldredge, who made a somewhat crude switchboard, and with Mr. Cooper in charge to serve as operator, we began business in real earnest. Lines were run out, and this little board with a row of terminal bells was the real thing and we were very proud of it and showed it to our telephone friends as the greatest ever. In less than two years we had in this exchange over one hundred telephones, and it was then that the New York and Pennsylvania Telephone Company dug us up and took us under their protecting wing, and gave us a taste of what real telephone business was like and the good it could do. They installed for us a new switchboard, handed us over the toll line running to Cherry Creek, took on their board at that place our local line, and put us on a par with the best of the times by adding a comfortable commission on toll messages. We shall always hold in grateful remembrance such men as F. E. Smith of Elmira, then general traffic manager, and J. W. Stearnes, of Jamestown, division superintendent.

When the New York and Pennsylvania was merged into the New York Telephone Company, we had grown to about 150 telephones.

Hoefler Ice Cream Co. Creamery. The Leading Industry in Leon

We had ten working lines, one leading to the north about 7 miles, another to the west about 6 miles, another to the south about 5 miles, and another headed for Cattaraugus, a distance of about 10 miles, and now encircling the hills between the two places. We had other lines out into the farming country. The lines above mentioned reached the villages of South Dayton, Cherry Creek, Conewango, and Conewango Valley, the latter place being the railroad point for Leon. At Cherry Creek we got in touch with the doctors, lawyers, druggist, the bank, mills, and most needed merchants. We had ten telephones in the village of Cherry Creek.

After the merger we installed a new switchboard of the Western Electric Company, to accommodate twenty lines, and as some of the lines were very heavily loaded, some having as many as thirty telephones, we started relief lines. Great care had to be exercised in this work to avoid induction, the bane of the grounded system, and here the ability and skill of Engineer Eldredge were put to the test, and although he did not entirely eliminate the "cross talk," he so far succeeded as to improve transmission materially.

Owing largely to the great induction to which we would be subjected in bringing more lines alongside of our present ones, we established a central station at Conewango Valley, and fitted it with an M-39 board of ten line capacity to accommodate local lines running to Ellington, a distance of 7 miles, another to Clear Creek, and a distance beyond of about 6 miles, two lines to Leon, and the toll lines of the New York Telephone Company. The business from this station is checked by way of Jamestown.

Our principal embogue, however, is at Cherry Creek, where all our checking is done. The business from our board is taken to Cherry Creek over two trunks of the New York Telephone Company, and one local line of our own, and therefore we are enabled to handle the business very satisfactorily and rapidly.

One of our best institutions at the present time is the Hoefler Ice Cream Condensory or creamery, where the farmers far and near bring their milk, and where it is prepared for shipment to Buffalo, the home office of the company. Here some of the finest ice cream in the world is made. We point with especial pride to this institution, and to the fact that this concern is one of the greatest users of the telephone in the exchange. In the illustration can be seen one of our lines stretching into a rural section, where in its journey over the hills and across the fields it takes on twelve farmers, and in its four miles follows the highway for only a mile. If this line could be shown in all its varied windings, over hills and down deep ravines, it would be very picturesque, amusing, and interesting.

This is one of the immediate advantages of the grounded system, for the lines can be carried through the trees, down the steep gulches, and over the rocks and through the brush, and left if need be for an indefinite time, for it will work even under ground. On one very windy day in the spring of the year, the superintendent was notified that the line was down five poles in length and lying in the road, dangerous for traffic.

The one making the call said he had buried the line for about twenty-five feet, or across the highway. Our engineer looked with some doubt on the idea of a buried line doing work, but arriving on the scene found it as represented, and the line getting there just the same. This has occurred several times since and always without inconvenience to the service. Another advantage we have is due to the fact that we do not have any electric lights, any trolley lines, or any other electric disturbances to interfere. A trolley line is now being promoted through the heart of our exchange territory, and an electric transmission line is also being pushed through, and therefore we shall be obliged to wake up and take

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notice, and a metallic circuit will eventually result.

To-day we can boast of having eighty-seven miles of lines, and are serving 209 patrons. This may not seem a very great advance along the road of expansion, but when one comes to understand that other telephone companies have also been on the move, that our territory is entirely rural, that we are in every sense a farming community, that we have many times to go four miles before we get a telephone, then you may see we have not been laggards. We have the entire territory supplied, and are now waiting for other worlds to conquer.

It would not be proper for this article to come to an end without a kind word for the New York Telephone Company and their able representatives, who have at all times shown us the greatest courtesy, and who have labored to bring the John M. Ackley Telephone Company up to the present standard. We are under personal obligations to Mr. Davey, of Jamestown, district manager, to Mr. Healey, of Buffalo, division sub-license manager, and we cannot ever forget the kindness of that whole-souled and honest-hearted man, the late William Gillette, from the office of Mr. Healey. That man was one of us, helping us to improve, rejoicing in our prosperity, and standing by us through our trials, ever optimistic, cheerful to the last, and to know him was to honor and respect him.

Organization Changes

Traffic Department

M. H. Orth, division superintendent of traffic, Westchester Division, resigned to accept employment with the Central District Telephone Company, of Pittsburgh, Pa.

W. B. Morell, district traffic manager, Southern Manhattan District, appointed division superintendent of traffic, Westchester Division.

W. L. Cook, district traffic manager, Jersey City-Paterson District, appointed district traffic manager Southern Manhattan District.

H. S. Foote, district traffic manager, Elizabeth district, appointed district traffic manager, Jersey City-Paterson District (not including Staten Island).

R. C. Burr, engineer, Traffic Engineer's Office, appointed district traffic manager, Elizabeth District (including Staten Island).

New Jersey Division

Plant Department

Frank J. Koehler, formerly splicer's foreman, appointed supervising splicing foreman Construction Department.

Thomas J. Cody, formerly lineman, appointed foreman construction line gangs, Newark district.

James M. Cook, formerly lineman, appointed foreman construction line gangs, Newark district.

Wilbur C. Acken, formerly instrument installer, appointed installer's foreman, Newark district.

John Curcia, formerly paver, appointed subway foreman, Construction Department.

Albert M. Bazley, formerly deskman, appointed wire chief Long Branch central office, Newark District.

Commercial Department

E. J. Higgins, local commercial manager, Paterson, appointed chief clerk, office of Mr. H. C. Carpenter, engineer, 16 Dey street, New York City.

M. J. Moloney, district commercial manager, Northern, will act also as local commercial manager, Paterson Local District. Those now reporting to Mr. Higgins will report to Mr. Moloney.

Central Division

Plant Department

L. D. Speed, district engineer, Utica, transferred to the American Telephone & Telegraph Company.

E. J. Barr, assistant engineer, Syracuse, transferred to Utica as district engineer, vice Mr. Speed.

L. Bogardus, appointed assistant engineer, Syracuse District, vice Mr. Barr.

G. W. Tilden, lineman, Syracuse District, appointed line foreman.

C. O. Moore, lineman, Elmira District, appointed line foreman.

Monmouth County's Response

OUT of 129 male employees in the plant department in the Monmouth County, N. J., district, 116, or 90 per cent., either are already members or have applied for membership in The Telephone Society. The Monmouth district is the most distant from New York of all the territory of the Main Society.

The applications were all spontaneous, showing that in spite of the long trips and late hours, the men are sincerely interested in the activities of the society for the coming season.

What other district and department can make as good a showing?

An Adventure by Telephone

Miss Mary L. Riordan, Night Chief Operator, Jersey City, submits an account of a really exciting experience and one which bade fair to be even thrilling. Very correctly, we know, she thinks our readers may be interested to hear about it:

"At 4:35 A.M. we received a subscriber's call. The operator answered 'Number please' several times, but no response came. Suddenly there was a terrible noise on the line as if someone were struggling. The noise then ceased and the line lamp remained lighted. Listening on the line a few minutes, I heard heavy breathing; I tried to attract the attention of the person who I thought was near the telephone by ringing on the line and putting it up on the 'howler,' but with no success. Someone could be distinctly heard moving around the room.

"I was afraid something might have happened, so I notified Police Headquarters, giving the name and address of the place concerned. Police Headquarters promised to send a reserve there at once.

"About half an hour later the subscriber flashed and said it was the dog that had knocked over the telephone. He had got tied up in the cord and could not extricate himself.

"Alas, I lost a chance to be a heroine!"

Satisfaction Both Ways

THE close and effective coöperation between the Commercial and Plant Departments in Plainfield elicited the following appreciative note from a subscriber who had asked for the removal of his telephone to a new address and later called at the office to have it moved a little earlier than he had previously requested:

NEW YORK.

New York Telephone Company, Business Department, Park avenue & Depot Park, Plainfield, N. J.

Gentlemen: I wish to thank you for your kind and expeditious attention to me in installing telephone at my new address, 823 Madison avenue, Plainfield, N. J.

It is a pleasure and a great satisfaction to have business dealings with a company whose management is always striving to please its customers.

With heartiest appreciation for the work done, I remain,

Yours truly,
LAURENS H. VAN BUREN.

Leaky Wires

Soon after the installment of the telegraph in Fredericksburg, Va., a little darkey saw a piece of newspaper that had blown up on the telegraph wires and caught there. Running into the house in a great state of excitement, he cried: "Miss Liza, come quick! Dem wires done bust an' done let all the news out!"—*Evening Mail.*

"A Telephone Pole"

The employer of a Polish girl who has learned quickly to speak English tells of her attempted mastery of the telephone. After its use was explained to her she was eager to answer every call. A ring came and she jumped to the phone.

"Hello," came from the receiver

"Hello," answered the girl, flushed with pride at being able to give the proper answer.

"Who is this?" continued the voice.

"I don't know," exclaimed the maid. "I can't see you."—*Philadelphia Ledger.*

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Main Society

VERY soon the announcements will go out to all members about the first big meeting of the season at the 71st Regiment Armory, on Tuesday evening, October 10.
Following is an outline of the program, which will begin sharp on the stroke of eight:

1. Blue Bell Orchestra.
2. Business meeting for ten minutes.
3. Blue Bell Glee Club.
4. Inter-Society meeting with the Up-State Sections, lasting forty-five minutes.
5. Blue Bell Glee Club.
6. Spectacular Scientific Demonstrations by Engineers of the A. T. & T. Co. and Western Electric Co., including Talking Movies. Forty minutes.
7. Blue Bell Glee Club.
8. Blue Bell Orchestra.

The meeting will positively close promptly at ten o'clock, although members who desire to remain for a social hour may do so.

The announcements when issued will give more details, including the names of the speakers in New York, Albany, Syracuse, and Buffalo, who will address the joint meeting. These addresses will be short, as the time is limited, but will be of the utmost interest.

Further details will also be embodied in the announcements regarding the spectacular scientific demonstrations to be staged by the Engineers, and other features that will be introduced during the evening.

The seating capacity of the drill floor of the Armory is slightly over 4,000. As we go to press the number of applications for membership in the Society received since the announcements of July 27 were sent out, a period of about three weeks, is..... 1,006
Present membership of the Society..... 3,137
Total..... 4,143

No one is urged to join, either by the Society or his Company, but unless you are a member, you will be unable to attend this meeting, or the Musical Comedy in June, without the payment of $1.50 for each occasion. Members will be admitted to all meetings this year on presentation of membership cards, which will be furnished them when dues are paid. The dues are $1 a year.

Application blanks may be obtained from any member of the Society, or J. D. Newman, Secretary-Treasurer, 15 Dey street.

Up-State

BEFORE and after the Joint Meeting with the Society in New York, each Section up-State will have a program of its own. Meetings will be held in Albany, Syracuse, Buffalo, Rochester, and other centers, due announcement of which will be made.

A feature that will be specially provided for all the up-State members is a

Transcontinental Telephone Demonstration

Other attractions which the up-State people know so well how to supply will add to the interest and joyousness of these meetings.

Application blanks for membership may be obtained from the following Secretaries of the up-State Sections:

Albany, H. R. Rupley, Hudson Section.
Syracuse, A. M. Cartter, Central Section.
Buffalo, P. W. Helffenstein, Western Section.
Rochester, Frank E. Lawn, Rochester Chapter.

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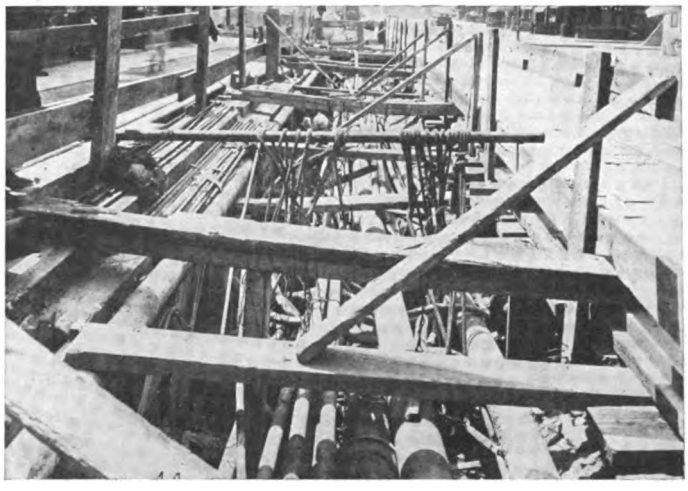
Electrical Subway Problems Raised by Rapid Transit Subway Construction in New York City

Part 3 (Conclusion)

By Clifford M. Hartley, Assistant Engineer, Empire City Subway Company

THUS far, this paper has dealt only with the subject of electrical subway construction, in its relation to rapid transit work, in a most general way. We have discussed at some length the problem of maintenance of the plant and cables exposed by the operations of the rapid transit contractors; the vital importance of some of the cables endangered by this work, and, in spite of this fact, the careless though generally successful way in which they are at times handled. We have endeavored to show the complications ensuing from a general attempt at advantageous restoration of the structures disturbed, and the difficulties involved at all points, in this work of restoration. There are, however, certain points along the various rapid transit routes where the rebuilding of subsurface structures has been particularly difficult, and thereby particularly interesting, and it is now our purpose to call attention to some of them.



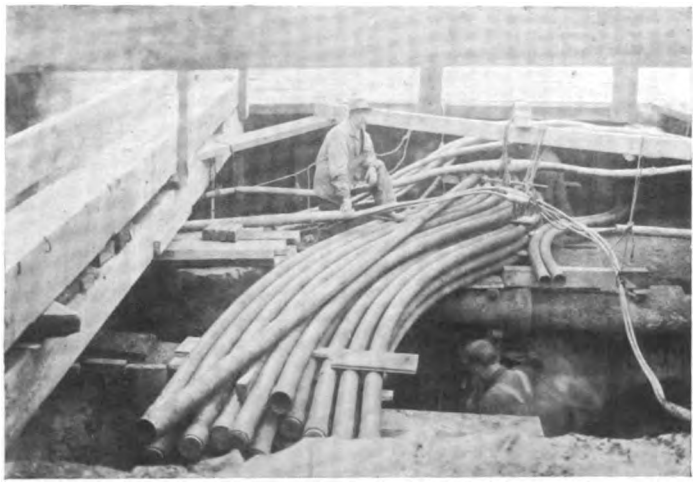
East Side Lexington Avenue, Between 84th and 85th Streets Looking South Showing General Conditions Under Which Existing Empire City Subway of 27 Ducts Was Built.

Without endeavoring to observe any special sequence in this presentation, the first instance which comes to mind is the crossing at Church and Cortlandt streets, possibly because this is a *most* unusual piece of electrical subway construction. THE TELEPHONE REVIEW has already published an account of a certain phase of this work, namely, the method of maintaining service in the all-important cables involved; but there were many other problems presented, and many other difficulties to be overcome.

This crossing, which is almost in a class by itself, in that it possesses certain features of design not found in any other subway, is known as the Cortlandt street syphon, and is so called on account of its resemblance to what is termed, in sewerage practice, an inverted syphon. The subway, consisting of 127 ducts, extends from a manhole on the east side of Church street, *under* the structure of the rapid transit subway to a manhole on the west side of Church street, and its construction in this form was made necessary by reason of the following:

Before the rapid transit line on Church street was built there was a subway of 100 ducts running west on Cortlandt street from the Central office, and carrying, among others, the main trunk cables to New Jersey and points beyond. On the west side of Church street, between Dey and Cortlandt streets, there was a line consisting of 27 ducts. Upon planning for restoration at this inter section, it was discovered that, owing to the underground station of the Hudson & Manhattan R. R. Co. and the new subway line, it would be impossible to replace these ducts in their original location, or in the street. They were therefore relocated in the only remaining space, namely, under the sidewalk on the east side of Church street, and close to the building line. This made it necessary to add 27 ducts to the original 100 crossing Church street,

Northeast Corner Broadway and Canal Street During Rapid Transit Subway Construction. Looking Northeast Showing New Empire City Subway of 24 Ducts Running North and South, and the Reconstructed Empire City 16-Duct Subway Running East and West Under It.



Southwest Corner Lexington Avenue and 76th Street Looking East from Just West of Lexington Avenue, Showing Pipe Bends in the 36-Duct Empire City Subway on 76th Street, Crossing Lexington Avenue.

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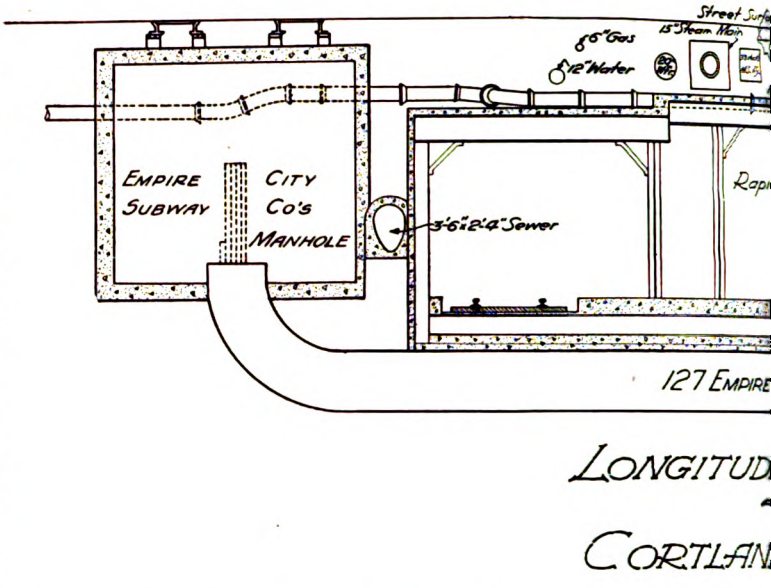
or a total of 127 ducts to be carried across a narrow intersection containing, besides the usual water, gas, and steam mains, an elevated railway, a street-car line, the rapid transit tunnel, and part of the Cortlandt street station. There is a clearance of less than five feet between the top of the subway roof and the street surface, and it was obviously impossible to bring across this shallow, congested section a subway of such size. There was but one way out, and it was a case of "get out and get under." The principal features of the design of this work are as follows:

On either side of Church street, just outside the walls of the rapid transit tunnel, a special manhole was built. These manholes are 18 feet and 2 inches long by 8 feet wide, with a clear headroom of 16 feet and 6 inches. They are of heavily reinforced concrete, and are each provided with four castings, to permit of access to all of the compartments into which the hole will be divided by the racking and stowing of the complete cable plant. The duct-bank, consisting of 127 3½ inch wrought iron pipes incased in concrete, is solid throughout the greater part of its length, but before entering the manholes it is split in two parts (6 wide and 10 deep) and each of these is in turn halved, so that the ducts enter the manholes, from the bottom, in four separate clusters. The problem of racking the cables from this entering direction was solved by carrying the ducts up in a pyramidal form, so that they are stepped up from the outside toward the center, the lowest ones being 18 inches above the floor, which places the open ends above the elevation of mean high water. These openings are further protected by hoods fitting around the cables and over the pipes. Special center racks and methods of racking are employed, as the cables are brought up vertically, and then bent over into a horizontal position. In place under the subgrade of the rapid transit tunnel, the top of the subway is 25 feet below the surface of the street.

The wrought iron pipes which form this subway, issuing from the bottoms of the manholes in a vertical position, are bent to a very short radius in order to bring them to the horizontal. It is the customary practice, as noted before, to make such bends in wrought iron pipe with the bending machine. On this particular job, however, they were hot-bent, each to its predetermined radius, as shown on a drawing prepared by the Public Service Commission. This was made necessary by reason of the great number required (254 bends) and the short radii used, some being only 3½ feet.

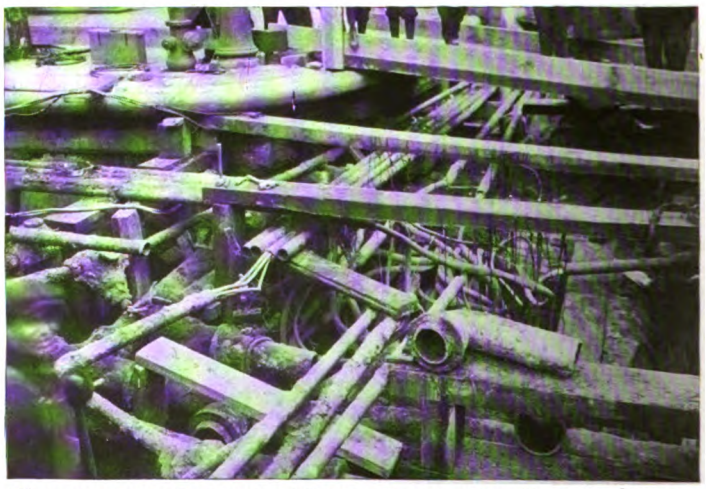


Not only this intersection, but all of Church street from Exchange alley to Vesey street, presents an interesting problem, or rather, a series of problems, which involve one of the largest cable reconstruction jobs the New York Telephone Company has ever had. The cables for the "Rector" and "Cortlandt" central offices, which serve Wall street and most of the rest of the downtown business section of New York, the long distance wires connecting New York with Boston and Washington by direct underground routes, and the transcontinental line to San Francisco, as well as other important Western lines, enter the Telephone Building at No. 15 Dey street, and have been directed into new wire channels with but slight interruption to the service, and without their users being cognizant of what is happening.

One of the most important points, and one of the most difficult, from the constructional viewpoint of the rapid transit contractor, along the routes of the new dual system, is at Broadway and Forty-second street. Here—for example—the existing rapid transit subway runs, in part, under the Times Building, and the new Broadway and Seventh avenue lines form a connection with the old system, also crossing underneath it to continue up Seventh avenue.

This intersection of Broadway and 42d street is the governing point in the studies for restoration and new subways along the Broadway line. It was necessary to determine accurately just what could be accomplished there, and for this reason a two-block-long subway was built (from 41st to 43d streets) in advance of rapid transit construction. This subway is unique principally in its location, which is between the car tracks,

Dey Street at West Intersection of Church Street. Looking West from East of West Curb of Church Street Showing the Two Banks of Empire City Subway, 18 Ducts at Left, and 22 Ducts Curving to the Right. A Western Union Telegraph Box Is Shown at Right.



Northwest Corner Broadway and Broome Street Looking Northwest Showing Manhole and Pipes Surrounding Same

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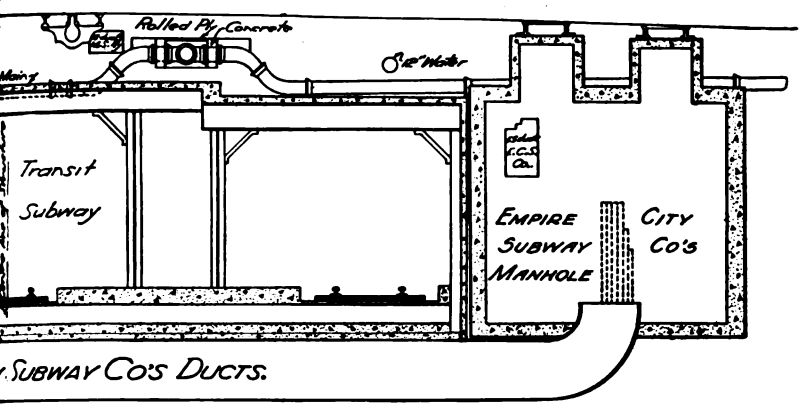


SUBWAY CO'S DUCTS.

L·SECTION

ST. SYPHON

preliminary studies having indicated this to be the only possible space in which to build a subway of the number of ducts desired, namely, fifty-two.

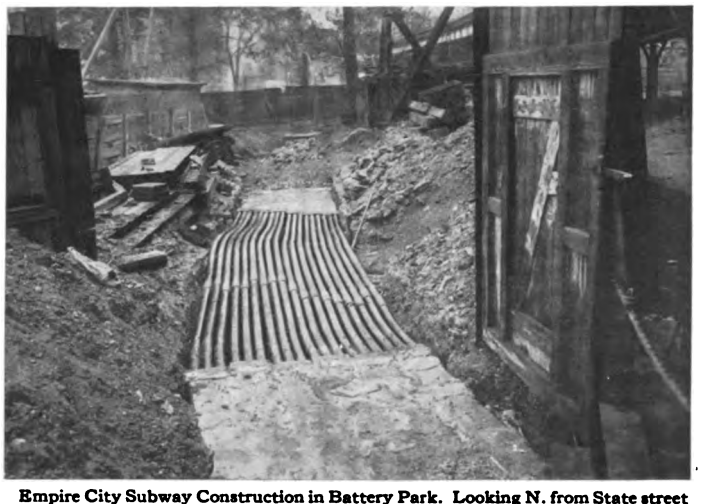
The formation of the ducts leaving the manhole at 41st street and running north on Broadway is six wide by nine high, which, with 3½ inch wrought iron pipe, requires a space 34 by 48 inches. At 42d street, where the line crosses over the present rapid transit subway structure, it was necessary to change this formation to 13 wide by 4 high, and even when thus flattened the top of the conduit is only 17 inches below the street surface. On the north side of 42d street, two gas mains—a 20 inch and a 12 inch—were relocated, and a specially designed sleeve was placed on a 12 inch water main, in order to permit of the passage of our structure; and further on, between 42d and 43d streets, it became necessary again to change the duct formation, and to split the subway in two parts to enable it to pass a 20 inch water main.

Added to these difficulties, there was the fact that this work must be performed entirely at night, or between the hours of 10.30 P.M. and 7 A.M. The volume of traffic at this intersection is enormous, and, as a matter of fact, it was not possible to accomplish much, on the surface, until after midnight, owing to the after-theater traffic. Every morning, upon finishing work, the excavation was planked over, and reopened the next night.

There is a certain phase of this subject of electrical subway construction in its relation to rapid transit work which, while somewhat of a digression at this point, appears to us to be worthy of consideration. It is the *peculiar* nature of the engineering work involved in the solving of the problems presented in this restoration of subsurface structures. Many engineering works of seeming difficulty, possessing spectacular features calculated to arouse and claim the interest not only of the general public, but of the technical world as well, are, in reality, comparatively simple in their design and construction. Ofttimes the magnitude of the undertaking carries an appeal which overshadows lesser works involving, more than likely, engineering problems of greater difficulty. Most engineering structures may be designed, and built as designed, without let or hindrance. But he who enters *here* leaves design behind. It may be said without fear of contradiction that in all this rapid transit work, involving as it does the expenditure of hundreds of millions of dollars, and the construction of mile after mile of tunnel, the most baffling and puzzling features are to be found in the subsurface restoration situations. Many an engineer, expert and capable in designing a bridge, for instance, would be at a loss when confronted with an intersection which is an apparently hopeless tangle, offering not a loophole of escape. Yet there are many such intersections, and they present real engineering difficulties which arise most unexpectedly, and in the twinkling of an eye. Their solution, as we say, requires a highly specialized form of engineering experience. To successfully handle this work, the engineer must have a knowledge of the practical application of engineering as applied to sewer and waterworks construction, gas and steam-main installation, and, of course, the construction of electrical conduits. Much of this must be obtained by experience on this particular work, the exact duplicate of which is nowhere else to be found.

With these facts in mind, let us consider for a moment the intersection of Lexington avenue and 110th street, which is interesting from several standpoints. In the first place, it is one of the few cross-town streets containing a large trunk sewer. This sewer is carried across Lexington avenue by means of a twin inverted syphon under the rapid transit tunnel. 110th street is a distributing street for gas and water mains, and is used as a main east and west thoroughfare for these utilities. Furthermore, this intersection of two narrow streets contains structures belonging to every company operating underground in the city of New York, with the exception of the New York Steam Company. There is an underground trolley system on Lexington avenue, and a storage-battery surface line on 110th street, as well as a 12-duct street railway subway and some

Empire City Subway Construction in Battery Park. 36 Duct Subway Changing Formation and Entering Manhole Under Sidewalk



Empire City Subway Construction in Battery Park. Looking N. from State street end showing iron pipe section of subway curving over mail tubes, connecting with clay ducts. This was necessary owing to shallow space in which to lay conduits.

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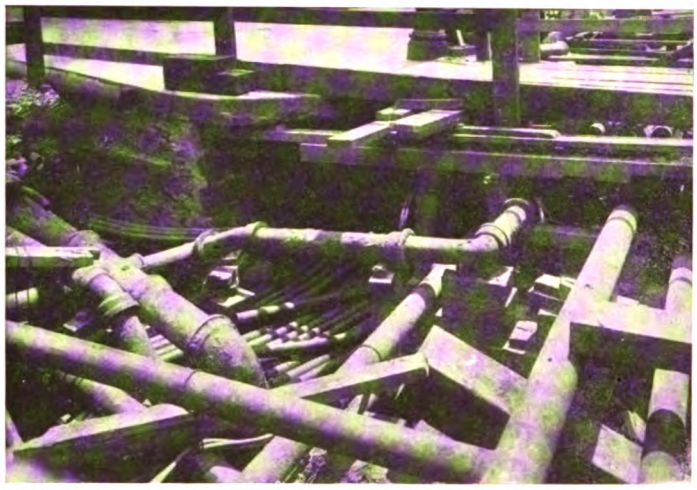


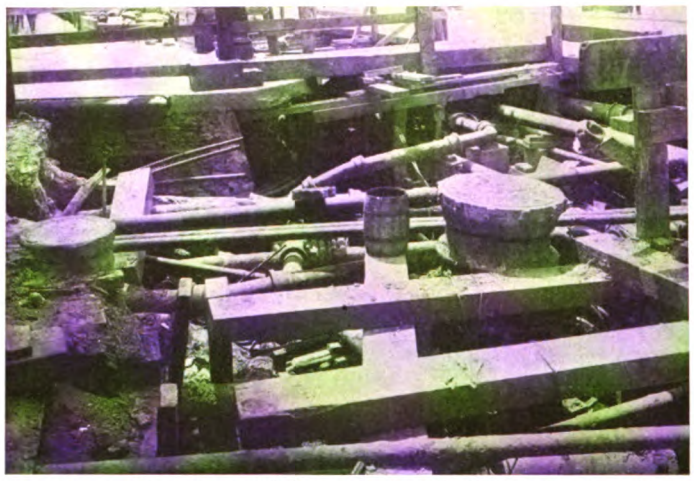
Broadway and Twenty-seventh Street. Looking S. E. showing general conditions surrounding Empire City iron pipe subway of 48 ducts. The 3 ducts shown curving to the left are part of a 12 duct subway which is to run east on Twenty-seventh street.

special signaling apparatus. The cover over the rapid transit tunnel is less than five feet. This, then, was the situation confronting the engineer intrusted with the task of carrying across this intersection a new Lexington avenue subway line of 28 ducts, which, in standard formation, requires a space 34 inches wide and 29 inches high. It is almost impossible to describe in print the apparent hopelessness of the task of getting through. Only by the most strenuous efforts, and finally, by the coöperation of all concerned in restoring structures at this point, were any results obtained. It being impossible to build a manhole large enough for 28 ducts, a small one providing for 10 ducts was constructed, and the rest of the line by-passed and then joined and carried across 110th street with wrought iron pipe, squeezed up under the cross ties of the 110th street railway tracks.

When 110th street was finally passed, a feeling of profound relief was experienced by all. This was but short-lived, however. After a few blocks of comparatively smooth sailing, 116th street rose up like a ragged reef in the calm waters, as a gentle reminder that life is but one damn thing after another, when *all* is said and done.

The difficulties presented by this 116th street crossing were two-fold, in that they involved the restoration of the existing plant on the west side of Lexington avenue, and the construction of the new subway on the east side. In addition to the double track street railway on Lexington avenue, there is also a double track line on 116th street, both operated by the underground trolley method, and a connecting curve south to west from Lexington avenue to 116th street.

The original restoration, as planned by the Public Service Commission forces, was unsatisfactory; and finally, in coöperation with the contractor, an appeal was made to the chief engineer of the Public Service Commission for permission to relocate three gas mains—a 6-inch, an 8-inch, and a 10-inch—lying on the west side of Lexington avenue. This permission was granted, and these three mains were diverted under the west sidewalk, and thence across 116th street at a point west of their original location. By making this change, it was possible to get our subway through in an acceptable manner.



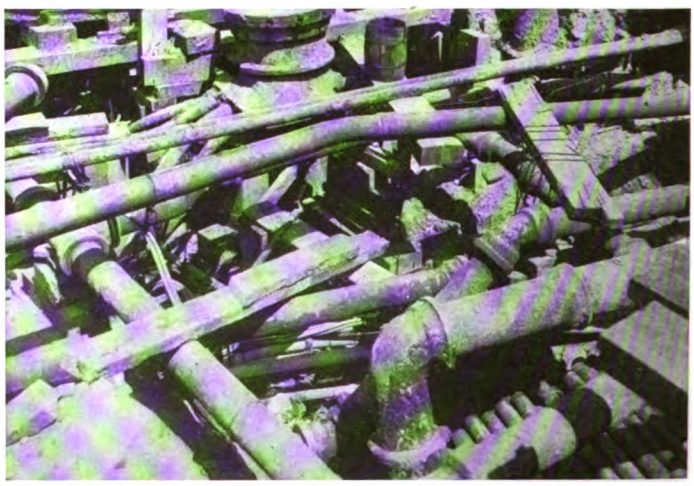
Broadway and Twenty-seventh Street. Looking S. The 3 ducts shown in previous picture turning east on Twenty-seventh street are shown in center background, the 48 duct subway being directly under them.

On the east side of the street, the only available space was found to be close to the curb, and even here the situation was complicated by the design of the ventilator shafts of the rapid transit subway. The outside walls of these shafts, which are on the curb line, are generally plumb, but in this instance they were inclined outwards at an angle of 45 degrees, into the street, thus cutting off considerable space. On the west side of 116th street there is a heavy line of Manhattan Street Railway ducts, which project below the yokes of the railway, and an automatic switching device extending some three feet out from the rail. These obstructions, together with the usual collection of pipes and mains, formed barriers which it required the combined efforts of all hands to pass.

Probably the worst intersection on all of the rapid transit work is that of Broadway and Canal street. This statement may be a trifle broad, as it is a difficult matter to pick out the worst among so many, most of which may be considered candidates for the rather doubtful honor. The obstructions here are many and varied, and it was only by a complete rearrangement of almost all the subsurface structures that the desired restorations could be made.

In the first place, there was originally a large brick sewer on Canal street crossing Broadway and flowing west. When the old subway, which crosses Canal street at Lafayette, was built, this sewer was re-designed to flow east and west *from* Lafayette street, thereby making it possible to reduce its size at this point. This was a fortunate circumstance. In connection with the restoration at this intersection, it was desired to build a new subway on Canal street to connect with the existing line on the west side of Broadway. This, however, positively could not be built, and the plan had to be abandoned. It was even doubtful, for a time, if the new 48-duct subway on the east side of Broadway could be taken past Canal street, but it was finally accomplished in the following manner:

The 48 ducts, close to the east curb,



East Intersection of Broadway and Twenty-seventh Street The general view of the intersection looking N. E. The Empire City subway of 48 ducts is shown in the foreground at right.

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were split in two banks of 24 each, when approaching Canal street in order to pass a Consolidated Telegraph & Electrical Subway Company manhole at the southeast corner, one bank going west of the manhole, and the other east. The easterly line was then carried into a manhole located back of the curb line of Broadway on Canal street. The westerly line, after suffering several changes in formation, in order to pass under or over various structures, is finally by-passed around this manhole to a junction with the other 24 ducts opposite the north curb line of Canal street. This crossing was all constructed of wrought iron pipe, and in order to accomplish the foregoing results, it was necessary to move a 20-inch gas, a 30-inch water, a 12-inch water, 16 C. T. & E. S. Company's ducts, two 8-inch gas, and two 6-inch gas mains.

Greenwich and Thames Streets. Subway of 24 ducts curving from under sidewalk at N. E. corner into manhole in course of construction under sidewalk at S. E. corner. **A sewer manhole and water mains are shown behind the subway.**

We might continue this article almost indefinitely with a protracted discussion of various other points of interest along the rapid transit routes, were it not for the fact that such a course would involve more or less repetition. As stated before, almost every street intersection opened up during the progress of this work furnishes its own individual problem, calling for special treatment. While the solutions of these in the field are intensely interesting to those intimately connected with the work, their explanation on paper carries a great deal of sameness. With the exception of the Cortlandt street crossing, the examples we have presented are typical of the conditions to be found everywhere along the lines of the rapid transit work, and, we trust, are sufficient to give the reader an idea of the character and importance of this subsurface reconstruction.

The Star That Gets Business

How a P. B. X. Listing Won a Nation for a Customer

THE head of a large concern in Williamsbridge answering his telephone recently was greeted by this statement:

You do not know me, nor have I ever met you, but I am in the market for some cocoas. I am not familiar with New York City, but in looking through the classified directory, I saw your name, and referring to the telephone book I found that your concern was the only one with a star before the name, which led me to believe that you were a bigger concern than the others.

The speaker was purchasing agent for the Russian Government and he bought $100,000 worth of cocoa. All of the business, with the exception of submitting samples, was done by telephone. The two men never saw each other from the beginning of the deal to the end. The money was placed in a New York bank and when the goods were delivered the money was paid.

One-hundred-thousand-dollar orders may not be guaranteed to follow the installation of a private branch exchange system, which will insure a star before one's name in the telephone book, but the Williamsbridge merchant does not hesitate to attribute this order of his to this mark of distinction in the telephone directory listing.

Some Don'ts for Good Telephone Service

Where the Telephone Stands

Don't place a wet umbrella, raincoat or rubbers near the telephone.

Don't allow painters to wash ceilings without first protecting the telephone.

Don't keep water near the telephone.

Don't place the telephone near a window during stormy weather.

Don't place the telephone where the cords will come in contact with the escape valve on a radiator.

Don't slam the receiver onto the hook.

Don't put a cuspidor on the same side of a desk as that which is occupied by the telephone—the desk stand cord may fall into it.

Don't place the telephone near any object on which the receiver may rest while on the hook.

Don't place the telephone in a position on a desk where it is in danger of being knocked off.

Don't let cords drag on the floor so that they will trip anybody.

Don't expect to hear the bell ring with the door closed and you in the next room or out in the corridor—get an extension bell.

Don't remove wire attachments from the water pipe—call the wire chief to have such work done.

Don't try to change the tone of bells by stuffing paper or other materials under them—call the wire chief and report your trouble.

Don't place foreign attachments on the telephone—many of them cause trouble.

Don't use cords for a pin-cushion or pen-wiper.

Don't put pins, toothpicks, buttons or defective coins, etc., in coin slots.—*Telephone Topics.*

Adequate Telephone Service

AN editorial, induced by the failure of a certain firm to have sufficient telephone equipment, appears in *Mill Supplies*, a trade paper published in Chicago. The question is an important one from many standpoints. The inability to get a number because it is continuously in use, often reflects, in the minds of those who are not familiar with the facts, upon the service rendered by the telephone company. And the business lost by the concern which is underequipped, as in this instance, will many times pay the cost of the required additional equipment. The editorial runs in part as follows:

This is from the heart. We have just spent the better part of an hour trying to get into telephone communication with a concern to which we desired to give an order. We called the number repeatedly, and as often received the "busy" signal. Finally, in desperation, we called another concern in the same line and placed the order.

Here is a lesson for all business men who receive orders over the telephone, and who does not, in this day and age? Where a concern has inadequate service this happens many times a day, and undoubtedly results in the loss of a considerable amount of business. In most cases it would be cheaper to install another phone or even a switchboard and operator.

Do good with what thou hast, or it will do thee no good. If thou wouldst be happy, bring thy mind to thy condition, and have an indifferency for more than what is sufficient.—*William Penn.*

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The Virtue of Necessity

AFTER waiting for three months for permission to go to the various fighting lines on the Russian fronts, Montgomery Schuyler, a correspondent of the New York *Times*, at last obtained the coveted document and visited extensively in the heart of the fighting districts, viewing at close range the life of the men and the operation of the aviation corps, the anti-aircraft guns, the heavy artillery—and the omnipresent telephone.

In his estimation, "the greatest single point of efficiency is undoubtedly the splendid system of telephones." This after an unusually intimate acquaintance with conditions in the various parts of the Russian "positions," as the fighting front of the Russian armies is called. He goes on to say that this effective system "is found everywhere on the entire front, connecting every point with every other point and making every eye have instant communication with every other eye, and with the central brain in charge of the district or unit. These telephones are found everywhere, each trench has its own means of communication with others, and each officer has an instrument at his pillow ready for instant use in case of a night attack.

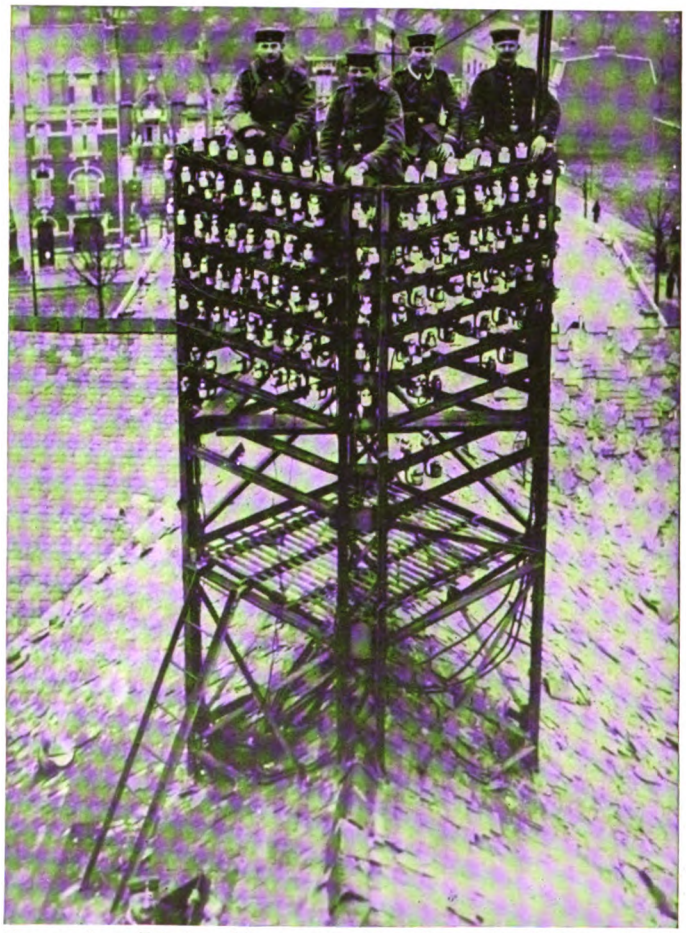
Russian Trenches in Front of One of the Fortresses in Russian Poland, etc.

The little compact portable cases are in use every minute of the day and night, giving timely notice of anything of interest or which might be of interest when brought to the attention of the 'man higher up.'"

Mr. Schuyler's description of the telephone as it is used thus on the Russian fronts is of intense interest to telephone people in particular, because it gives such vivid first-hand witness to the vital part our American telephone is playing in the great war. But the story carries the stamp of a greater truth than that. It is universal. It will bear translation into terms of peace.

It is the fate of humankind that they can distill the fullest value of their resources only under stress of greatest pressure. Under the gruelling strain of the war the nations of Europe are finding an efficiency and power in the constant use of the telephone which it was not theirs even to suspect before the conflict. Necessity has revealed powers that will not be surrendered when swords are laid down—powers of telephone service as truly essential to the well-being and growth of a nation as those so-called more fundamental ones which are already seen to be growing out of the war.

For us in America, whose knowledge of telephone possibilities has been always much farther advanced than that of Europe, there is less to be revealed of what the telephone can do than there was for Europe, but even in America the depth of telephone possibilities has yet to be sounded. The truths about what the telephone can be made to do that are being wrung from the bitter experience of Europe may do much for an ever-observant and ever-active America, keeping her still in the van of telephone progress.



German Army Telephone Linemen Repairing Wires on Roof Fixture Top of a Church in War Zone

Why Rang the Telephone Bell?

Recently a resident of Bellows Falls, Vt., newly known to fame as the burial place of Mrs. Hetty Green, registered at one of New York's hotels. He arose about noon next day and made a bee line for the desk, where he lodged two complaints. First, that he had not been called at the rising hour he had indicated; second, that his sleep had been greatly disturbed that morning through incessant ringing of the 'phone bell in his room. Why didn't he answer the 'phone? Because, he said, he knew no one in New York and was sure, therefore, that the call was not for him.—*N. Y. Hotel Review.*

Concentration

Concentrate all your thoughts upon the work in hand. The sun's rays do not burn until brought to a focus.—*Alexander G. Bell.*

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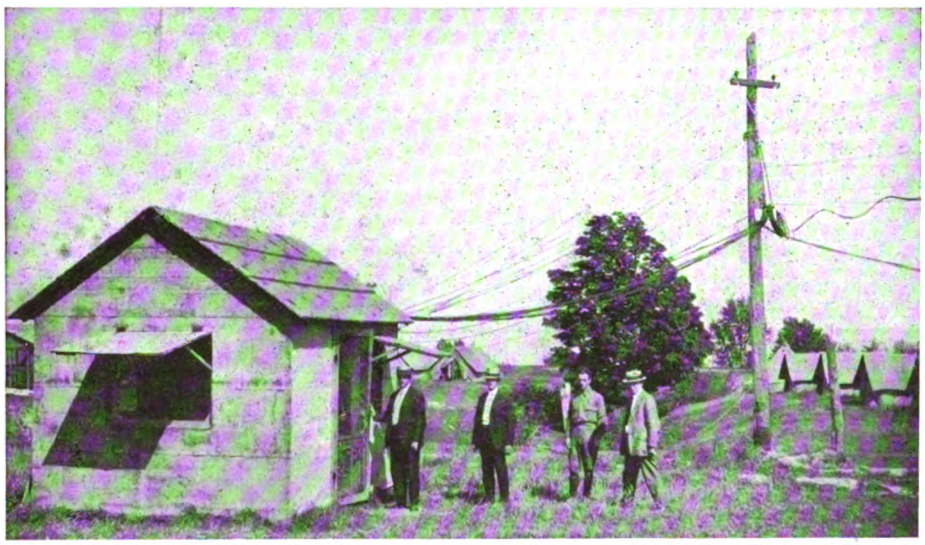
The Plattsburg Training Camp

"The Plattsburg Idea"

By T. H. Leonard, Local Manager, Mountain Home Telephone Company, Plattsburg

Telephone Equipment

THE Plattsburg Training Camp which has created so much favorable comment gives one an idea of what can be accomplished telephonically. A few days before the camp opened all quarters were connected by a private branch exchange system, consisting of a 50 line portable field switchboard and 45 extension stations, of the field type telephone. This system is connected to the central office of the Mountain Home Telephone Company by five trunk lines.



Building in Which P. B. X. Switchboard Is Located. 1. C. H. Dierksmier, Asst. Electrical Engineer Signal Service U. S. A., at the Door. 2. W. H. Schuyler, Commercial Supt., Mountain Home Telephone Co. 3. Private P. W. Reidy, Troop "M," 2d Cavalry (Operator). 4. F. H. Leonard, Local Manager, Plattsburg. Lake Champlain in the Background.

Regular army men operate the board and with their knowledge of army work excellent service is given. As many as 1,800 calls have been handled in one day and quite a number of these were to long distance points.

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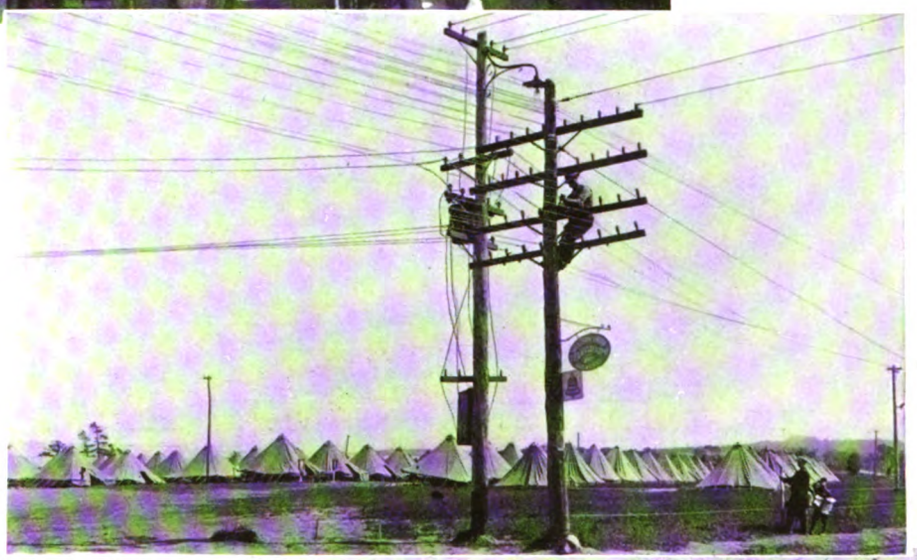
P. B. X. with U. S. Army Operators
C. H. Dierksmier, Asst. E. E., Signal Service U. S. A. Standing. Note the Portable Switchboard

A Unique Problem

The telephone system at the training camp is under the direct supervision of C. H. Dierksmier, Assistant Electrical Engineer of the Signal Service, U. S. A. Mr. Dierksmier's regular work consists of installing signal service systems at the different army posts throughout the country, but it is safe to assume that the Plattsburg camp presents a somewhat different problem. Seven thousand men —business men with multitudinous outside interests, not professional soldiers— finished the August camp and 3,500 are in training at present. The success of the telephone work is undisputed.

The Mountain Home Telephone Company, has aside from the P.B.X. connections, six sound proof booths, located in a large tent, with an attendant present, to look after the wants of the "Rookies." This tent is well patronized during the afternoon and evenings, when the "Rookies" call their homes and places of business.

The first camp of 1,400 men finished their work on July 7. They were rather unfortunate in having a great deal of rain during their stay, but this did not seem to dampen the enthusiasm. In fact a number reënlisted for the July and August camps. The accessibility of the camp from the standpoint of communication made it possible for many business men who could not otherwise have remained away so long, to stay over for a second, and in some cases a third encampment. Their homes and offices were always within speaking distance, even when the regiments were off on their week-long hike into the country.



Paul Seymour, Lineman, Mt. Home Tel. Co., Connecting Drops to Public Telephone Booths.

Telephone at Every Camp on Hike

The training covers a period of three weeks at the camp and one week for a hike through the country. The Telephone Company sends a man ahead of the hikers, to have service in readiness for the "Rookies" when they reach camp. It is a novel sight to see men seated on the ground talking over the telephone with their homes, offices, etc.

The fact that the Telephone Company is able to connect the camps at a different point each day without delay gives one an idea of Preparedness from a Telephone standpoint.

A Seattle physician tells this one on himself. He recently called one of his patients on the telephone and asked, "Mister Carr?" A feminine voice on the other end of the wires said, "Well, then wait for the next one."—*Pacific Telephone Magazine.*

Mountain Home Telephone Company's Tent Showing Public Telephone Booths and "Rookies." Note the "Trouble-Shooters" on Motorcycles

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The Black Tom Explosion

Impressions of an Eye Witness

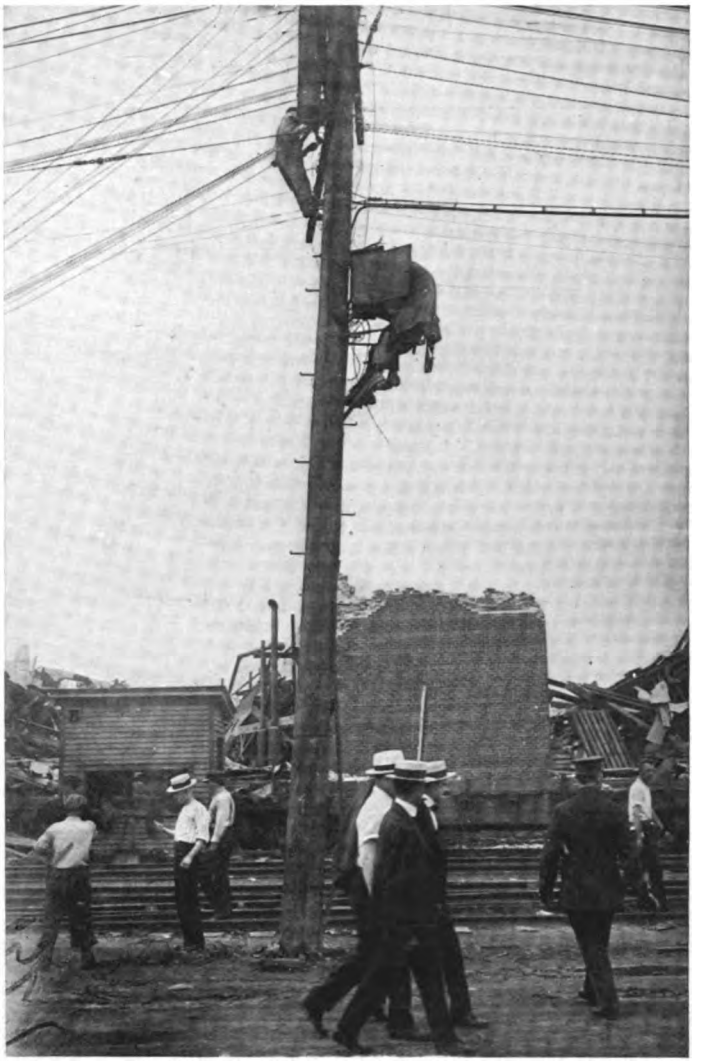
THERE was a vivid light in the sky, though it was night and should have been still dark, or gentle starlight. "A fire," it seemed. But the light in the sky mounted higher, and spread. Brighter and brighter it grew; half the sky was filled with what would have been a radiant glory but that it was too fiercely huge to mean anything but uncontrolled disaster. The terrific light climbed to the very zenith. And then, when the breaking point of human endurance seemed to have come to one who watched, it was as if the heavens opened. Near the horizon, in the heart of the intense glow, appeared a sort of cart-wheel of flame, which even as it came was separating in myriad dagger points of fire, as if the setting sun had burst. Only an instant it must have showed there above the horizon, but it seemed a heart-breaking space of minutes. At last the rent sky closed again, the light flickered and died, and the terror of the night seemed to have vanished.

On a sleeping porch just beyond the edge of the Jersey meadows the watcher turned over and tried to forget the distant catastrophe, tried not to conjecture what the morning papers would have to tell of suffering and horror.

Suddenly came a partial explanation—a deafening detonation, as of a crash of thunder close at hand and many times multipled. The house swayed and rocked as though an earthquake shook it. All the concentrated horror of the light that had been too huge and bright for safety was now translated into sound. And not one jot of its terror was lost. It had taken these intervening minutes for the crash to travel across the ten miles or so of meadow land and city, but the two phenomena were each in its own form too overpowering and terrific not to belong together.

When the last rumble of the great crash had died away a lesser glow flared up in the sky, and a steady crack-crack and low roar like gun practice and shell-fire followed without interlude. Half an hour later the grim duet was punctuated with another cataclysmic crash, only less intense than the first, and again the nerve-racking undertone, accompanied by the irregular rise and fall of the red glow in the sky.

What could it be? Could anything be done? The watcher's persistent thought was to telephone and find out. But no, the traffic would be heavy enough at this unwonted hour. The morning would have to tell. And the distant staccato thunder roared on unceasingly and unexplained.



BLACK TOM EXPLOSION

Telephone man working in able box connecting temporary wire to conductors in cable. Above him is Public Service Electric man repairing their lines.

Extent of the Disaster

WHEN the story of the Black Tom explosion was known, nothing in all the details of the affair was more inspiring than the telephone story which has gradually come to light. Over two million dollars' worth of property was destroyed when munition cars and barges at Black Tom Island, south of Jersey City, blew up just after two on the morning of July 30, in the greatest explosion, considering material loss, that has ever occurred in our territory. The explosion shook the country for forty miles around, killed several people—miraculously few because of the hour—and terrified millions, yet there was no further damage to the telephone plant than the loss of a ten-line monitor switchboard, and six desk sets, 2,000 feet of twisted pair, and one booth—the equipment of the subscriber involved in the accident. The telephone story then is not primarily one of lines "out" or a colossal restoration job.

Telephone Emergency Service

THE public, awakened by sounds of disaster, flew immediately to their telephones to find out what was happening. In the Jersey City, Bergen, Hoboken, Tompkinsville, Union and Bayonne exchanges particularly the traffic increase was enormous. It was the time of night when the traffic load is usually at the minimum, and hence the situation was the more exacting, when the switchboards, sure thermometers of the public peace of mind, suddenly showed banks of flashing line lamps.

The night force worked with the utmost speed and dexterity to satisfy the demands of the excited callers. The spirit of service was abroad. Soon the doors of the central offices began to swing open to newcomers—operators off duty who were hurrying in from their homes to the central offices to help give the service that they knew would be demanded. And so it was that before the shock of the explosion had fairly awakened the public, additional operators had taken up their positions at the boards. Many of them knowing the pressing importance of every moment at the switchboard had not waited to dress with their customary care, but with the one thought of service to be given arrived at the central office in whatever attire was quickest and most appropriate to the situation. Personal appearance for the moment was of little concern to anyone, and the emergency was a testimony to the common sense and true appreciation of values of the young women concerned.

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The volunteers were not simply those whose hours found them off duty. Miss M. G. Davidson, of the Stagg central office, Brooklyn, happened to be visiting in Jersey City, and it was not possible for her to reach her own office. But this did not bother her one bit. The necessity was greater near at hand. Miss Davidson went immediately to the Jersey City central office and taking her place at the "B" board rendered invaluable service to the Company and to the public.

Mrs. W. LaBeau, formerly Miss J. McCarthy, who had been a supervisor in the employ of the Company, realizing the pressure of the emergency, reported at the Hoboken central office at 2.45 A.M. and worked diligently until 4.30.

The Plant men, too, lent a hand with the operating. Mr. Wm. G. Doe, inside troubleman at Jersey City, arrived at the exchange at 2.30 A.M., anticipating considerable equipment trouble. Finding that the equipment was in working order, he put on a head set, temporarily resigned as troubleman, and became an operator.

Mr. J. B. Finnerty, wire chief at Tompkinsville, finding no damage to the local plant equipment, gave timely and valuable assistance by operating at the "A" board during the rush, as did other Plant men in various districts.

Regulars and volunteers alike worked with might and main and their splendid response to the situation has, in the words of one who saw the work at Jersey City, "written another chapter in the history of service to humanity."

During the daytime of Sunday, traffic was as heavy as on weekdays in several of the central offices, from twenty to thirty times the regular number of calls being handled. The increase during the hours just following the explosion gives some idea of the situation which called out such loyal service on the part of the Plant and Traffic forces: Between 12 A.M. and 6 A.M. at Bergen the increase was 1,893 calls, over a usual traffic load of 114; at Jersey City, 1,592 increase over the usual load of 154; at Hoboken, 833 over a usual load of 95; at Bayonne, 235 over 46, and at Tompkinsville, 435 over 93.

Time Enough to Worry

A VERY impatient patron, whose voice betrayed unmistakable anxiety, rushed up to the watchman at the door of the Paterson central office shortly after 9 P.M., Wednesday, August 9.

"I want to see someone who can get a message to Columbia, just across the river from Portland, Penn. I've been to the Western Union Telegraph office and they tell me everything is closed there at 9 P.M. Two elderly persons, over eighty, now staying with a minister in Columbia, are leaving there early to-morrow morning, and there will be no one here to receive them. It is very important that a message telling them not to come to-morrow be delivered to them to-night. Since everything is closed, and will not be open until after they have started in the morning, I thought I might be able to talk to someone here who would know just how to get someone in Portland to send across the river and deliver the message."

Pointing to the booth, the watchman assured him he could take his troubles there and tell them to the toll operator.

Miss Martin, toll operator, soon located and connected him with a grocery store, and he was promised a message would be delivered that night.

When the patron came out of the booth the watchman remarked: "I suppose you left your troubles there."

"Did the central upstairs do that?" asked the patron.

"Yes," replied the watchman, "time enough to worry when the telephone fails you."

"Wonderful!" the patron exclaimed. "I thank you all;" he marched off with a beaming smile on his face, which reflected his admiration of the telephone, and the celerity of the efficient toll operator.

J. CLARKE,
Real Estate Department, New Jersey Division.

The Country Fire Alarm

IN the old days a fire in the country might possibly be prevented from spreading to the other buildings of the farm, if there were enough men on the place to form any kind of a bucket brigade, or if the neighbors happened to see the smoke and flames in time to reach the scene of action before it was too late. Otherwise it was a case of "let it burn" because there was no possible way of stopping it. Not so to-day, with the rural telephone at work.

Through the efforts of Miss Colgrove, night operator at Livonia, N. Y., assistance was summoned at about an hour after midnight recently, to fight the fire which had been discovered in the barn of Mrs. George E. Muck, and to save the adjacent buildings. Mrs. Muck made known her appreciation of what the telephone meant to her on that night, in the following letter:

CONESUS, N. Y.

To the New York Telephone Company, at Livonia, N. Y.

Although some time has passed since the destruction of my barn by fire, I wish to express my earnest thanks to you all who were so kind and prompt to answer my calls during the fire. Your prompt assistance enabled me to get in communication with many neighbors that otherwise we might not have been able to reach, it being in the middle of the night. And again I wish to express to you my heartfelt thanks for your prompt attention and grateful assistance in a time of trouble.

I especially wish to express my gratitude to Miss Colegrove, the night operator, who was on duty when the fire alarm was given. She was a heroine at her work on the keys, in calling the neighbors together. She was a prompt and willing worker and is due a lot of credit, more than I am capable of giving her, and all the rest of the operators, located at Livonia. They seem to be prompt in responding to all calls and they also are due a lot of credit.

Yours very truly,
MRS. GEO. E. MUCK

Rural Telephone Halts Petty Larceny

A SUBURBAN squirrel while treating his family to butternuts recently, held up all conversation on a party telephone line, according to a newspaper report. A subscriber wished to use the telephone but was unable to get Central. All he could hear on the line was an excited and unintelligible chatter. He drove up the road to the home of a neighbor who was on the same party wire, and what was his amazement to find that a group of squirrels had entered the house and were busily engaged in disposing of a bowl of butternuts which had been placed near the telephone. In their excitement they had knocked the receiver off the hook, and as usual in the case of robbery, the theft was discovered by this means.

The Audit Clerk

Merry is the hunter
As he rides afield at dawn,
Merry sings the mower
As he goes to cut the corn;
The shepherd, too, is merry,
But—I'm sorry to record it—
An audit clerk's not merry as he goes to start an audit!

Fast flies the corn
'Neath the thresher's sturdy strokes,
Blithely rings the woodman's axe
As fall the sturdy oaks;
And harvest sounds are cheery,
But—I fear it would be rash
To say the leaves fly bravely as one ticks the petty cash!

Under the greenwood
To chase the fleeing deer,
To track the swift wild-duck
Upon the sedgy mere—
Hunters' joys are these,
But—on balancing, I doubt
If the ticker's bosom thrills as he seeks his "two-pence out."

L. J. G.
Selected.

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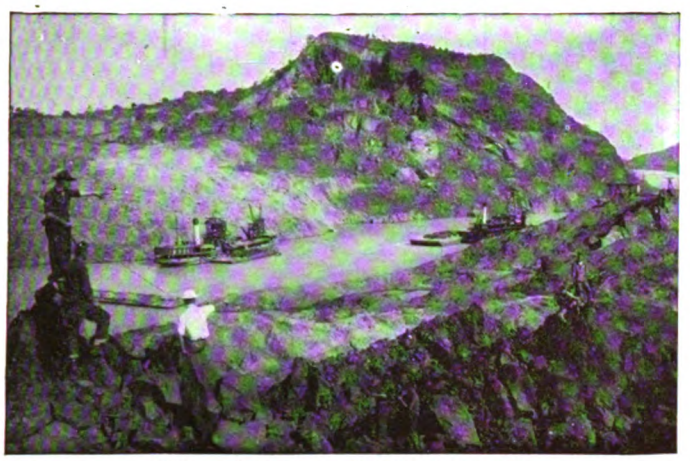
Telephone Construction in the Canal Zone



Construction Party at Work in Culebra Cut

Detachment of Signal Corps Working on Banks of Culebra Cut

THE work of the Signal Corps of the United States Army is always of interest to readers of THE TELEPHONE REVIEW, inasmuch as the Signal Corps is charged with the duty of providing all means for the transmission of information in time of war, whether by telephone, telegraph, radio, flying machine, or by visual signaling methods.

The Signal Corps troops are accordingly organized into field, telegraph, radio, and aero companies, depending on the kind of duty assigned that organization. The field companies are equipped with wire carts and "buzzers" and provide insulated "field" lines laid rapidly on the ground for use during the tactical operations of large bodies of troops in battle.

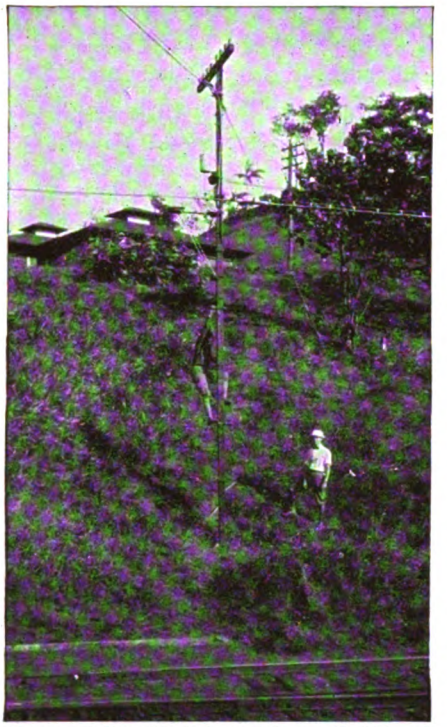
The radio companies are mobile mounted organizations, provided with portable radio sets which can accompany the army into the field.

The Jungle Where Work Must Be Done

The aero company is provided with six aeroplanes.

The telegraph company is an organization made up of telephone and telegraph experts trained to provide the necessary telephone and telegraph construction connecting an army with its base.

The Signal Corps of our army is very small and totally inadequate to meet the needs of the nation should it engage in war. Should war come it would be necessary for the Government to depend on volunteers to secure the required technical men to fill up the many "field," radio, and telegraph companies needed.

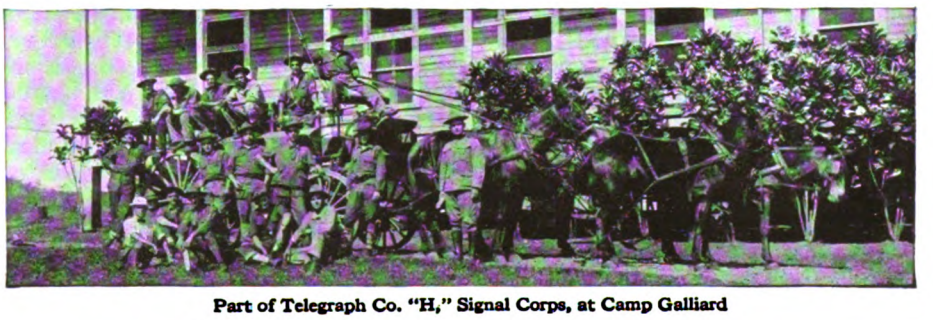


Using a Railroad Rail for a Pole at a Bad Turn

In this issue we print a number of photographs showing the work of the Third Platoon, Telegraph Co. "H," Signal Corps, now on duty in the Canal Zone. After the completion of the Panama Canal, troops of the regular army were sent to Panama and established military posts at Camp E. S. Otis, Empire, Culebra, Corozal, Gatun, and Quarry Heights. Last fall a platoon of Telegraph Co. "H" Signal Corps was sent to the Isthmus to build the necessary telephone system for these posts.

The work, which was done under the direction of Major C. McK. Saltzman, Signal Corps, has been completed, and each post now has a modern central energy system with an instrument in every office, barrack, and officer's quarters. Each post system is connected by trunks to the system of the Panama Railroad Company, which enables any officer, barrack, or office to communicate with any other officer, barrack, or office in the Canal Zone.

The completed systems are giving the most excellent satisfaction, and reflect credit on the soldiers who built them.



Part of Telegraph Co. "H," Signal Corps, at Camp Galliard

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A Layman's Impressions

(Before and After a Central Office Visit)

By C. L. Seymour, Spring Commercial

EDITOR'S NOTE.—After long and intimate experience with the circumstances indicated in our caption—the outsider's ideas of a central office, before and after the enlightening experience of a central office visit—Mr. Seymour has welded the composite of these impressions, gathered first hand from almost innumerable subjects, into the account which we print below. It is written as if by one person in a small group, although it is in reality the voice of hundreds who have gone through the experience described, under the observation of Mr. Seymour and others of our Commercial Department.

Patrons Discuss Telephone Service

WE had been discussing the question of wrong number connections on telephone calls and telephone operation in general, and after many varying opinions had been offered, discovered that none of us really knew just how such things were done, why wrong connections were made, or what steps were taken to prevent or correct them. In fact, we knew nothing of the conditions existing in the telephone exchanges with which we came in daily contact when making our more or less numerous telephone calls, both in business and socially.

Vague Ideas

We all had a somewhat vague idea of a number of frivolous young girls seated before a mysterious contrivance known as a switchboard, into which, when the spirit moved them, they would occasionally insert some equally mysterious plugs.

Between these operations they chewed gum, read novels, talked scandal and dress. Also they were furnished pad and pencil with which they would mark down calls against telephone subscribers, and if it sometimes seemed that a mistake had been made they would (perhaps) erase or add one or two of these marks.

We felt that wrong number connections were undoubtedly the direct result of some stupid operator, too deeply engrossed in one of the before-mentioned novels, or possibly with enunciation impaired by an excess of chewing-gum.

As we discussed these questions there seemed to be much difference of opinion, if not an actual confusion of thought, in the minds of some, regarding this question of wrong numbers and the possibility of their resulting in an erroneous charge against the subscriber.

Decision to Visit an Exchange

We, therefore, determined to settle all dispute by a visit to one of the telephone company's central offices and by actually "seeing the wheels go round."

A visit to the nearest commercial office of the company immediately secured a most cordial invitation to visit and thoroughly inspect any central station most convenient for us. We were also delighted with the information that we had arrived at a most opportune time, as they were just then preparing to take a party through the central station located in that building.

Taking advantage of this opportunity, we joined several other seekers after knowledge, and under the guidance of a man specially assigned to this duty, as we learned afterward, by reason of his ability to answer any and all questions which might arise, we were ushered into an elevator and conveyed to the exchange floor.

Quiet and Order in Central Office

Upon stepping out of the elevator we were immediately impressed by the air of quiet order and the subdued but intense activity in the place. Surprise followed surprise in rapid succession. It was big, light, airy and perfectly adapted for the work to be done there. We had expected it to be small, poky, stuffy and unsanitary. And where were the frivolous, gum-chewing, novel-reading girls? Not here, certainly.

These girls were healthy looking, intelligent workers, and they were all working. These facts were apparent at the first glance. And now we became conscious of the fact that the place was not quiet, but that a steady, subdued hum, like that of some high-speed machine, pervaded the whole atmosphere. As we followed our guide to a position behind the operator at the near end of the great switchboard, we discovered that the hum as of a great machine was made up of a conglomeration of words as follows: "Chelsea 7400 is busy"; "6148 does not answer"; "Busy"; "I am ringing them for you," etc. These remarks were being repeated by all (in substance) over and over again with variation only of the numerals and central office designations used, and all merging into that steady hum of sound. And each of these brief remarks was punctuated by a nimble hand inserting or withdrawing a plug, pressing a button or lifting a key, and by the twinkling flashes of the thousands of tiny electric light signals on the board. And as we watched we were again impressed by the way these young women worked. Not hurried, but rapid, sure, and unhesitating it was. As we listened to the clear, untechnical explanation of our guide, it was made apparent that the millions of telephone calls of this great city were handled in the most scientific, up-to-date manner known to the men who have made the telephone a life study.

Mechanism of a Switchboard

We were shown that, by an ingenious arrangement of the numbered sockets in the switchboard, the operators were enabled to find the numbers required rapidly and accurately. We were shown how the connection is completed if for a number of the same exchange or central office designation, and how it is connected through for completion to another point if for some other district, and how the completed call is registered by machine, only upon the operator's receiving the unmistakable signal that both the calling and called party have finished talking and replaced their receivers.

Distributed up the length of the board were the supervisors—the experts, counselling, instructing, relieving and watching, always watching. Each one wearing a portable operating set, capable of instant connection at any position, where her advice or assistance on an unusual call might be needed.

Many times had we listened with more or less skepticism while the telephone company's representative had explained these things. Now we could see that what he had stated was indeed the case.

"Wrong Number"

But even now there remained the haunting suspicion that the wrong number connection was a most prolific source of overcharging calls, and, as if in answer to the thought, we heard from the girl before whose position we were standing the words, "Did you get a wrong number? Excuse it, please. What number did you call?" And after a question to our guide we watched and listened closely and found that the confusion of thought in connection with these occurrences was, without doubt, the result of ignorance of the method of operation. When the rules of logic, probability and possibility, and the psychological conditions obtaining at the time are brought to bear on the question, we found that everything is against the possibility of the error resulting in a charge against the subscriber. The strongest of all influences, the natural course of procedure, is against it.

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Human Element

We learned that these unfortunate happenings are kept down to a minimum by careful training and thorough supervision, but as a very potent factor is the human element, they cannot be entirely eliminated. Some of the reasons for their occurrence are: phonetic similarity of some numerals, the almost universal propensity to transpose a number, poor enunciation, etc.

We had thought that the wrong number feature was the weak point in the recording system, but a careful analysis, together with this practical demonstration, failed to prove it so. On the contrary, it seemed most unlikely to cause a resultant erroneous charge.

Accuracy

It must be generally admitted that the operator taking the call and, we learned, also the one who makes the charge, almost invariably gets it correctly. She repeats it back, and if in error, is immediately corrected by the person making the call, before anything is done toward the actual connection or registration of it.

If the fault lies with an operator, it is generally with that one who completes the final stage of the actual connection.

It should also be borne in mind that after passing the call, the originating or recording operator is awaiting the steady disconnect signal before charging the call or in any way manipulating either the cords or register.

In the event of a wrong number being obtained, the operator controlling the registration of the call does not get a disconnect signal, and, therefore, neither disconnects nor registers. What she does get is the alternating flash signal from the calling party, and on going in on the connection is advised of the error and is again given the number desired. It is then necessary for her only to pass along the correction and await the signal to disconnect and register the call.

Registering Calls

Many people contend that two or perhaps three wrong numbers given on the same order will necessarily result in an equal number of registrations, and, in like measure, increase the overcharge; but on the contrary it is only logical to assume that the greater or more aggravated the error, the less is the likelihood of its being overlooked or treated in an ordinary way. For certainly not even a very poor and careless operator, if such were allowed at the boards, would deliberately and immediately register a wrong number to which her attention had just been called. Obedience to her careful training, and the fact that it will spare herself unnecessary labor and avoid trouble, make it her natural course to exercise extraordinary care on that call from that moment.

Call Back the Operator

It would appear that the only possible chance for a wrong number connection to appear as a charge is in the event of the calling party's abandoning the attempt to get the number asked for when he has been given a wrong number. We venture to say that this seldom occurs. It isn't according to human nature, and it is, without doubt, universally understood that to correct the operator after a wrong number is obtained is an absolutely necessary bit of coöperation in order to get the number desired. Be the correction patient or impatient, courteous or otherwise, it is usually there in some more or less intelligible form, and one usually gets the number desired if it is possible to get it.

All of this has happened before the period to register the call even approaches. But even supposing both parties should disconnect and the operator, getting the straight and steady disconnect signal, should obey it and register the call. Even then the charge is canceled by a "wrong number ticket," which she makes out immediately upon her attention's being called to the mistake. And there is no reason for her not making out such a ticket should occasion arise. She is not covering herself by failing to do so. There are a hundred chances to one against its being her mistake. She got the number first hand—so to speak—repeated it back and had it verified by the person making the call. The telephone company could not justly charge wrong number tickets against the operator making them out, and they fully appreciate the fact that wrong number connections will sometimes occur, and they must and do make provision for the handling of them just as carefully as for other features of the work.

Message Registers

We learned also that, so far as was possible and practicable, mechanical and not human elements had been placed in control in the operating system, and that all operators were compelled to comply with them. For instance, we were shown that each individual line was furnished with its own electrically operated and entirely separate call register, and no call could be recorded on that register unless that particular line was actually in use. This was a fixed mechanical condition, which must be complied with before registration was possible. And as we saw this demonstrated we recalled how often we had decided that someone else's calls were being charged to our line!

Chief Operator

We next visited the chief operator, who is in constant touch with every part of the great switchboard under her care. We found her a cool, level-headed young woman, who seemed to be thoroughly familiar with every phase of her multitudinous duties, and fully alive to the responsibilities of her position.

Information

We saw, also, the information desk, to which all inquiries are directed from the regular operating positions. Instead of the one girl we expected to see at this work there was a considerable number of busy young women who seemed to be answering every conceivable kind of question, from the latest news of the European war to the present or probable condition of the weather, and we learned that while these operators were there for the purpose of giving information to facilitate telephone service, the questions fired at them on subjects distinctly foreign to it were many and various.

Wire Chief

We visited the alert and efficient wire chief, the man who watches over this great mass of intricate wiring; we were shown the great "distributing frames" whereon the thousands upon thousands of wires are separated, secured and marked for identification after passing into the building in the form of cables containing from 50 to 600 pairs of wires.

Terminal Room

These cables, we were told, are assigned to blocks or sections, and as they pass through their respective blocks they gather up the individual lines and become larger and larger along their run until they pass into the underground street conduits and thence to the exchange. Their contents of many wires are then again separated at the "frames" where they are identified, apportioned and run to the switchboard operating positions.

Do as We Did

Our tour of inspection was over. We had seen it all. Much more than we had expected to see or imagined there was to see. Also we had been delightfully entertained and instructed. We realized that our former judgment had been wrong, as is nearly always the case when one is guided by absolute ignorance or merely superficial knowledge and hasty conclusions.

We had learned a great deal, and obtained a vast store of most interesting information. Every question had been answered promptly, freely, and with the utmost clearness of explanation. We have known people who condemn their telephone service as carelessly and inefficiently operated. Our advice to them is—go and see for yourself as we did.

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Training the Children "By Machine"

THE telephone was on a stand beside the door of the living room, so all the Sunday afternoon gathering of family and callers had box seats for the little drama on which the curtain was rung up by the telephone bell. They had not been discussing modern drama, but that was what they witnessed.

She was a beautiful woman of about thirty, with the poise which unconsciously accentuated her beauty, but with a warm, democratic humor and a keen, human aliveness that kept her completely from being the goddess which her beauty would have made her if it could. Indeed her beauty has nothing to do with this story at all, although the onlookers thought it a rather lovely adjunct.

Feminism had been the subject of some lively conversation and the middle aged bachelor whose views were more deeply entrenched than any others in the room, probably because he had less acquaintance with the facts, bemoaned the lack of discipline under which the rising generation were growing up. "There may be machines to do everything around the house. What you say may be true, about woman's not being needed so much of the time at home as in the old days. But what about the growing kids? You aren't training them by machine, are you?"

"Certainly," said the husband of the handsome woman, "Billie and Ralph have to run the vacuum cleaner at our house for half an hour every Saturday morning."

The hearty laugh and chorus of approval at the expense of the dogmatic bachelor was interrupted by the telephone bell.

A jumble of excited voices at the other end of the line attained proportions of such volume and intensity that they could be heard well across the room, and at the sound, the mother of "Billie" and "Ralph" rose with a good natured laugh. "Oh, I recognize those voices," she said. "We left Billie in charge of Sallie and the house, because Ralph, the oldest, was away. Billie never had so much authority before, and I guess it has caused some difficulty."

She took the instrument and her voice was firm and grave, though her eyes sparkled with amusement at the situation. Brilliantly beautiful she was as she stood there laughing and unembarrassed, with her voice under perfect control, serious and firm for those at the other end of the wire. The other guests, who watched and heard, needed no argument for their conviction of her supreme ability to manage and train her children with an inward strength and beauty as superb as that which they saw.

"Yes, Billie, this is Mother," she said gently.

The storm of voices and the sound of tears came over the wire as distinctly as any such confusion could. It might have been a dozen lively youngsters all trying to talk over the wire at once, but in truth it was only two. The fire of battle had augmented each to the force of six.

"Wait a minute, children. Billie, let Sallie take the telephone first." The gentle tone was unanswerable.

"Billie, give it to Sallie."

A tearful tale of injustice and the undue expansion of legitimate rights, on Billie's part, was poured over the wire, with frequent volcanic, but promptly quenched interruptions from Billie. A gentle word or two and then, "Now let Billie take the telephone."

"They've been having a regular battle royal," the mother laughed parenthetically to the interested group in the living room.

"Mighty clever of them to come right to headquarters for settlement," conceded the dogmatic bachelor.

Billie's story was heard to the end and by that time the storm had spent itself.

"Billie, go right up to the third story, and don't come down till we get home." Some further assertion of his rights evidently greeted this edict, but a quiet repetition of the words ended the matter.

"Now let me speak to Sallie," and in a moment.

"Sallie, stay downstairs in the library till Mother gets home."

Not a word of remonstrance from either, but a calm if somewhat tearful "good-by." It was plain to all that the control exercised by the firm voice lost none of its potency over the wire.

The incident shed new light on the interrupted discussion and it bade fair to be resumed with vigor, when the bachelor's voice broke in:

"In my experience that is a decidedly novel way to use the telephone, but—live and learn. I see there is after all a 'machine' to help train the children!"

"The Manager"

IN that hugely humorous monologue entitled "Cohen on the Telephone," which we have all played on our talking machines, Mr. Cohen, being desirous of talking to his landlord concerning a damaged shutter, is connected with a certain bank. Very early in the conversation he feels that the person on the other end is not treating him in a civil manner, whereupon he argues with him in characteristic manner and ends by hurling this verbal bolt at the offender with decided emphasis on the last word: "—and if I have any more of your impertinence I'll speak to the Manager about you!" The voice inflections must be heard to be appreciated. The person on the other end turns out to be the manager himself and while, on the record, the ejaculations of the flabbergasted complainant are side-splitting, there is something to be gained from a consideration of the psychology of the situation, which is one that we meet with frequently in our dealings with the public.

Let us leave the bombastic Hebrew with his funny dialect to assume a subservient attitude toward his manager-landlord, and consider the case of Mr. Brown and the Company. Mr. Brown has been trying to find out something or to have something done and he has either talked to one clerk three or four times or to three or four clerks once each. He finally despairs of gaining his point and grinds his teeth in a state of helplessness. Then it is that he remembers that most concerns have a "Manager," a person who in the minds of the public represents an "isle of safety" in the path of the flood of corporate management, unnecessary (?) red tape, etc. Or the public might liken themselves to the sands on the beach, irresistibly washed to and fro by the rough waves, and think of the Manager as a protecting sea wall placed at the shore line.

Mr. Brown is sure the Manager could help him attain his object. He feels that the "Company" wants the right thing done and the "Manager" will realize that Mr. Brown's object is a reasonable one—at any rate he will be an impartial umpire, and so he calls for the "Manager."

There's the bell now. Mr. Brown wants to talk to *you!* Are you ready for him?

C. F. McCORD,
Local Commercial Manager, Passaic.

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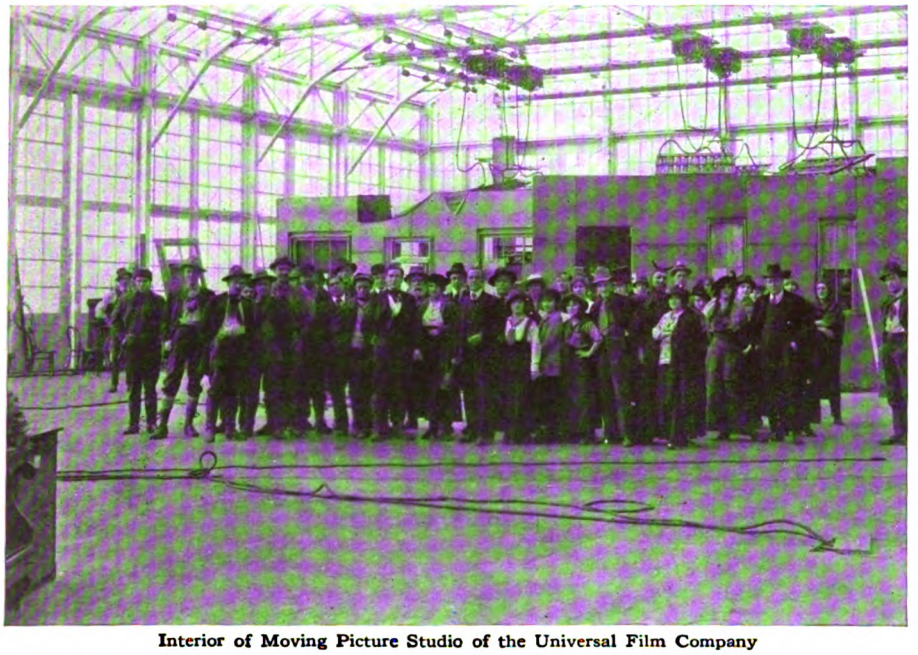
Rapid Motion in Fort Lee

By H. Bell, Local Commercial Manager, Englewood

ALTHOUGH within a short distance of New York City with its teeming millions, the village of Fort Lee retained, until comparatively recently, its out-of-the-world air of rural charm. A walk along its principal thoroughfare, Main street, conveyed the impression that the din and rattle of the city had been left hundreds of miles behind.



Interior of Moving Picture Studio of the Universal Film Company

Of late, however, the atmosphere of the place has undergone a subtle change, an air of bustle and activity has replaced the erstwhile placidity. The reason is that Fort Lee has been chosen as the home of motion picture companies, and already some six concerns have established plants: The Peerless, Eclair, Willat, Solax, Universal, and New York Motion Pictures.

With a view to ascertaining what had led these companies to select Fort Lee as a haven, several of the various directors were interviewed. The reasons given, briefly summarized, were these: its accessibility to New York City, the comparative cheapness of land, moderate taxes, wonderful variety of scenery within a radius of ten to twenty miles, purity of air, and absence of hampering municipal restrictions of one kind or another. After such a recital of desirable features, one may be pardoned for assuming that Fort Leeians generally did not realize what an El Dorado they have. Under normal conditions it is roughly estimated these companies carry on their pay rolls about two thousand people, but this number is largely augmented when plays or special scenes are being filmed.

Some idea of the work that is done by these companies will be gathered from the fact that in the case of the Universal alone, 1,500,000 feet of film are produced each week. It is interesting to know that there are 16 individual photos in each foot and it is necessary to punch 8 holes in each photo. How the statistician would revel in these figures, 284 miles of film, 24,000,000 photos, and 192,000,000 holes punched, each week!

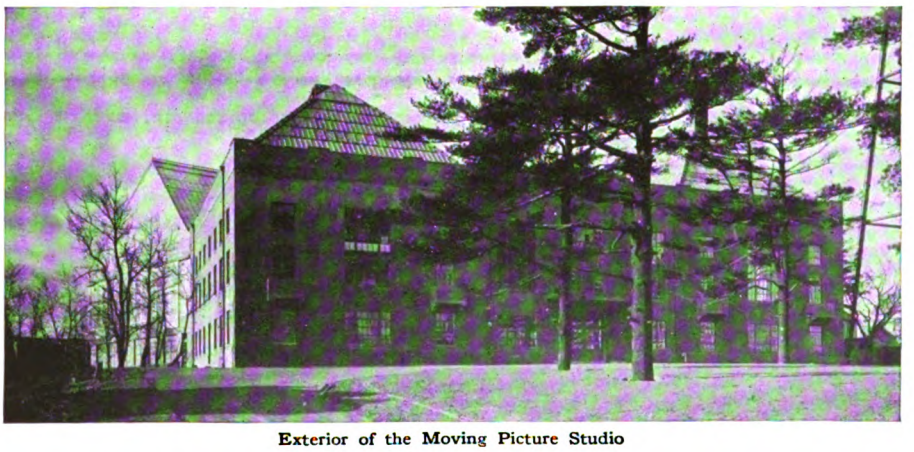
The advent of these film companies has, as can readily be imagined, brought many changes to the neighborhood, and in time will materially alter its characteristics. It will become, indeed, it is now, an industrial center of increasing importance.

House rentals have risen, new houses are being built to accommodate the film companies' employees, and various improvements of one kind or another are being effected throughout the borough. Everybody seems to be basking in the smiles of prosperity. People of a pessimistic frame of mind would find a visit to "Movie Town" very efficacious.

It is a liberal education to spend a day in or about Fort Lee, or better still, if you are fortunate enough to obtain admission, at one of the studios when some play is being staged. If you happen to hit on a lucky day you may catch a glimpse of the ever youthful Lillian Russell, Mary Pickford, Clara Kimball Young, Robert Warwick, Wilton LaKaye and many other celebrities.

You can have your fill of thrills in witnessing, say an attempted suicide in a watery grave—the Hudson River—and the heroic rescue, or an attack by red Indians near the bluff of the picturesque Palisades; in fact the whole gamut of human emotions can be experienced. Sad to relate, the Fort Leeians are now so accustomed to these sights that they have become quite blasé and scarcely evince the slightest interest or curiosity, even if they see the beauteous maiden being kidnapped by the wicked "once aboard the lugger and the maiden is mine" sort of villain.

The advent of these motion picture companies has brought possibilities for telephone growth even greater in proportion than the other improvements in the town. All the film companies have P. B. X. systems and number between them 20 trunks, 89 stations and 5 tie lines connected with switchboards in New York offices. The telephone growth for the whole Fort Lee area has been rapid since June 1, 1910, when the Englewood local commercial office was opened, the number of telephones having risen from 97 to 440, an increase of 353 per cent.



Exterior of the Moving Picture Studio

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The TREND of REGULATION

By R. V. Marye, General Attorney

Comparison of Rates Not Controlling

DR. W. A. McCLANAHAN complained to the Public Utilities Commission of Illinois that the rates of the Tri-County Light & Power Company in Viola were unreasonable and discriminatory. He established the fact that said rates were greater than the rates for similar services rendered by the company in two or three neighboring municipalities and based his claim of unfair charges in Viola entirely upon such comparison. The Commission having found that the company's revenues as a whole were inadequate to furnish a reasonable return upon the fair value of its property plus a proper allowance for operating expenses and depreciation, and that Viola, in proportion to its population, was the least remunerative of the municipalities served, approved the rates in Viola, holding that the fact that the company charged lower rates in other municipalities where the population was much larger and the consumption of current greater had no bearing on the reasonableness of the rates in Viola.

Duplication of Facilities Unwarranted

THE Farmers' Mutual Telephone Company of Cardington, O., applied to the Public Utilities Commission for a certificate of public convenience and necessity authorizing it to operate in Cardington and adjoining territory.

The Morrow County Telephone Company, which operated in practically all the territory involved and which had developed it to such an extent that there was one telephone for every six and six-tenths inhabitants in the county generally, and one for every five and three-tenths inhabitants in Cardington, objected to the issuance of the certificate. No complaints, either formal or informal, had ever been filed with respect to the character and extent of the Morrow Company's services or of the rates charged by it.

The Commission held that neither public convenience nor necessity required the entrance of a second company in such a field and therefore refused to issue the certificate. That, moreover, if the service of the existing company was not voluntarily extended to persons desiring it it could be forced by the Commission to extend service to such persons and to render service without discrimination and at the same rate to all subscribers.

Not All Discrimination Is Unjust

IN passing upon the complaint of Richard H. Kramer *et al. v.* The St. Joseph Ry. Light, Heat & Power Company, the Public Service Commission of Missouri held, among other things, that all discrimination is not prohibited by the Public Service Commission Law, but only such as is unjust or unreasonable. That the law does not prevent a reasonable classification of consumers and permits the placing in each of several classes of all consumers who are served alike and contemporaneously and under the same or substantially similar circumstances and conditions. That, therefore, there is no unjust discrimination in classifying consumers and serving them under classified schedules of rates with sliding schedules based more or less on the average cost of service to consumers in each class.

Flat Rates Inherently Discriminatory

THE Mound City Light & Water Company applied to the Public Utilities Commission of Illinois for authority to change its schedule of electric rates principally by the elimination of flat rates and the substitution therefor of meter rates.

The Commission authorized the proposed changes, holding that flat rates are inherently discriminatory and that the substitution therefor of meter rates is to be commended.

Minimum Charge Justified Under Another Name

A DISPUTE which had arisen between the village of LeRoy and the Pavilion Natural Gas Company as to the right of the company to make a minimum charge of 50 cents for gas in view of the provision in its franchise providing that the maximum rate should not exceed 40 cents per 1,000 cubic feet was submitted to the Public Service Commission of New York, Second District.

The Commission decided that the provision of the franchise to the effect that the company should furnish natural gas to its customers meant that it would furnish such gas when and as required and, in addition thereto, meant that the company must stand ready to furnish such gas at all times whether the same is used or not. That this "readiness to serve" involved many items of service and expenditure and consisted of keeping the distribution system in order, reading meters, answering complaints, keeping a record of customers' accounts and in general attending to the convenience and demands of customers. That the physical use of the gas was merely one phase of the service which the company was called upon to furnish and that, although the maximum price fixed in the franchise comprehended these other elements and services, there could be no just reason why the company should not be paid for the same despite the franchise since the law contemplates that while the public is entitled to reasonable service the company is entitled to a fair return therefor. That, therefore, since each consumer costs the company a considerable sum each month even though he consumes and pays for no gas and is therefore a fixed and definite charge upon the company irrespective of his consumption of gas, he should pay his fair share of the actual cost which the company incurs by keeping itself in readiness to serve him with gas. That consequently the monthly charge as proposed by the company should be approved, but the phrasing made use of in its tariff schedules should be changed and the charge should be known as a "monthly service charge" instead of a "minimum charge."

Competition Never Successful

T. S. ASHMEAD *et al.* applied to the Public Service Commission of New York, Second District, for authority to operate stage routes by auto buses in the city of Rochester. The New York State Railways, a corporation which operates a system of electric surface cars in said city, objected on the ground that the establishment of the stage routes would seriously affect its revenues.

The Commission sustained the railway company and refused to issue a permit for the establishment of the bus lines, holding, among other things, that while prior to the enactment of the Public Service Commissions Law the State had not deemed it wise to interfere to any appreciable extent with the natural workings of the competitive system in the public utility field since it was supposed that by permitting and encouraging practically unrestricted competition the largest measure of good would accrue to the public at large, it is now the policy of the State to protect existing public utilities from unrestricted and ruinous competition and by efficient regulation to compel them to furnish a high quality of service and to permit them to earn a fair return on their investment.

This change of policy, says the Commission, was not actuated by any desire to show favoritism to persons or corporations who happened to be already interested in public utility enterprises, but was expected to be effectively used in compelling existing utilities to give the very best possible service, the underlying thought being that in almost every case the ultimate sufferer from unrestricted competition was necessarily the public, since experience had demonstrated that competing companies were never likely to achieve such secure financial standing as to enable them collectively to give as good service as a single well regulated monopoly kept up to the mark by efficient regulation would be in position to supply.

Utility's Acceptance of Notes of Third Party Does Not Operate as Payment of Consumers's Bill

THE U. S. Circuit Court of Appeals for the Eighth Circuit in passing upon the claim of the Holmesville Mill & Power Company against Henry E. Maxwell, receiver in bankruptcy of the Iowa Nebraska Public Service Company, for the balance due under a contract for electric current, held that the acceptance by the power company from the Public Service Company of the negotiable notes of a third party for the amount due for power furnished to the Public Service Company, which notes were not paid when due, did not, in the absence of an agreement to that effect, operate as a payment so as to preclude the power company from exercising its option to terminate the contract for arrears in payment of bills. The court held further that since the contract gave the power company the option to terminate the contract if payment thereunder should become three months in arrears it was not necessary that the power company turn off the current before it gave notice of exercising its said option and that a notice directed to the company which originally contracted for the service, but served on the president and general manager of the company which succeeded to the rights of the contracting company, who was also the president and general manager of the contracting company, was sufficient.

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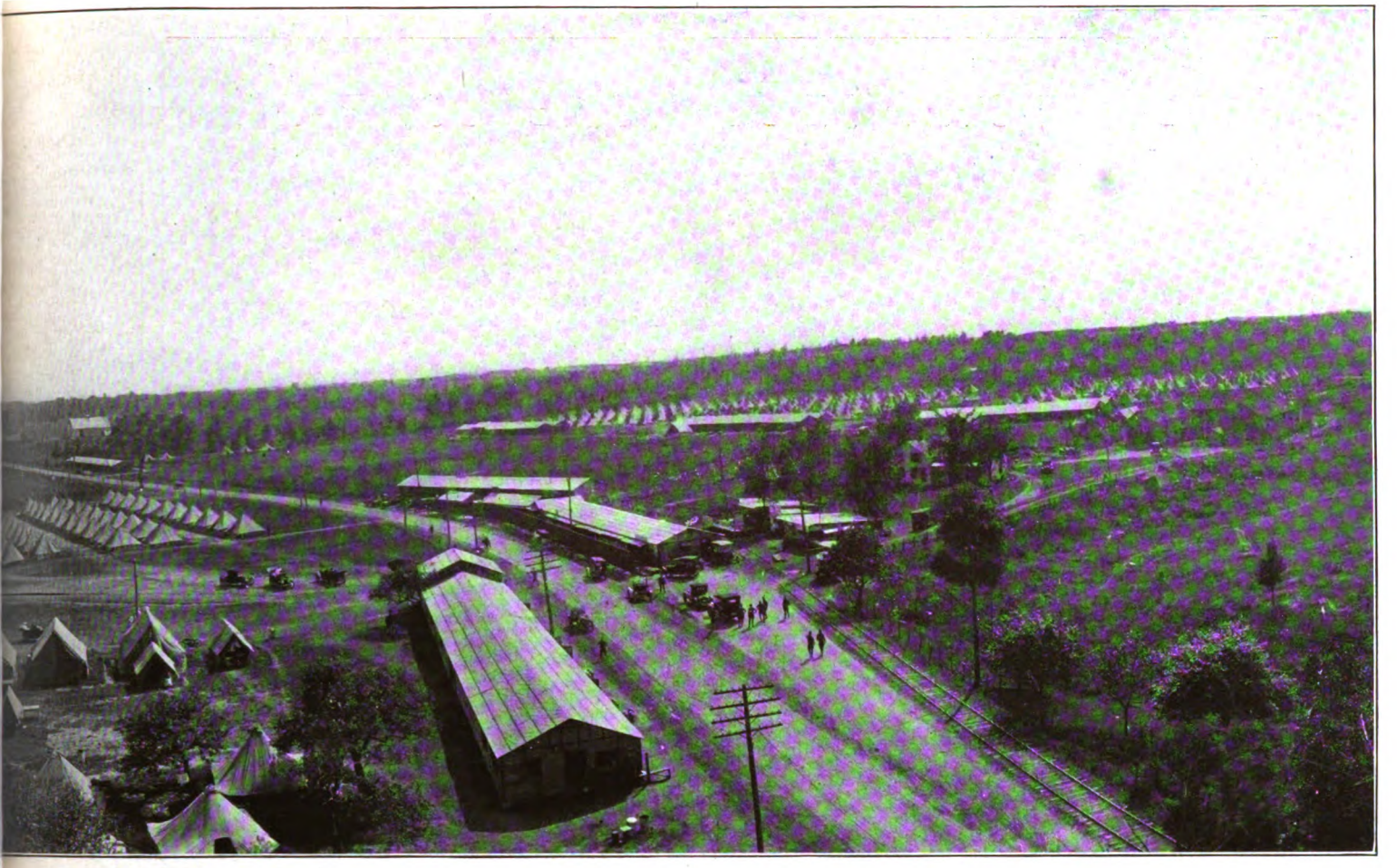

Y., Showing Extensive Telephone Lines Serving the Encampment

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H. F. THURBER, Vice-President
FORD HUNTINGTON, Vice-President
WALTER BROWN, Secretary & Treasurer
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C. T. RUSSELL, General Solicitor
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General Com'l Supt.

W. F. BAKER
Asst. to Gen'l Com'l Supt.

A. D. WELCH
General Com'l Engineer

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Advertising Manager

J. LENIHAN
Manager Collection Bureau

Manhattan-Bronx & Westchester

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Central

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H. G. GREENE
Manager Public Telephones

A. D. SCOVEL
Mgr. Traf. Inspection, M.-B.

Manhattan-Bronx

H. J. SCHULTZ
Division Supt. Traffic
15 Dey Street

Westchester

W. B. MORELL
Division Supt. Traffic
40 South Fifth Ave.
Mt. Vernon

Long Island

G. L. YATES
Division Supt. Traffic
81 Willoughby Street
Brooklyn

New Jersey

G. H. MERRILL
Division Supt Traffic
281 Washington Street
Newark

Hudson

E. G. ANDERSON
Division Supt. Traffic
158 State Street
Albany

Central

H. H. KENNEDY
Division Supt. Traffic
321 Montgomery Street
Syracuse

Western

J. J. WELCH
Division Supt. Traffic
44 Church Street
Buffalo

ACCOUNTING DEPT.

P. O. COFFIN
Auditor

J. A. KENNEDY
Auditor of Disbursements

A. J. NORMAN
Auditor of Receipts

B. M. WILSON
Chief Traveling Auditor

Lower Manhattan

L. F. HALSTED
Division Auditor Receipts
24 Walker Street

Upper Manhattan-Bronx

E. A. GIRARD
Division Auditor Receipts
2033 Fifth Avenue
New York

Westchester

W. H. CALLAHAN
Division Auditor Receipts
22 West First Street
Mt. Vernon

Long Island

A. W. DEAS
Division Auditor Receipts
195 Broadway
New York

New Jersey

C. H. LEONARD
Division Auditor Receipts
281 Washington Street
Newark

Hudson

J. P. HILL
Division Auditor Receipts
158 State Street
Albany

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Division Auditor Receipts
321 Montgomery Street
Syracuse

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THE TELEPHONE REVIEW

VOL. 7 NO. 10 OCT. 1916

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An Old Fable Retold

By Laurette E. Waldo

Cashier, Local Commercial Office
Batavia, N. Y.

With pride and arrogance one day
A Hare to a Tortoise was heard to say,
"A pity 'tis, I will be bound,
That Nature built you on the ground."
And then with egotistic smile
Proposed a race for half a mile.

By rivulet in deepest wood
The dwellings of these neighbors stood,
And straight away, 'neath leafy shade
Our agile friend the racecourse laid.

The Tortoise meekly gave consent,
And to the race his wits he bent.
He said, "Should you arrive before,
Hang you a sign upon my door.
But if perchance I win the race,
Upon the door a sign I'll place."

Off went the hare with leap and bound,
While Tortoise crawled along the ground,
Then right before his eyes, he read,
"DON'T TRAVEL, TELEPHONE INSTEAD."
"Ha, ha!" said he, "It will be best—
I'll call my wife, she'll do the rest."

"Central, please give me 1-3-0."
In answer came his wife's "Hello!"
When Mrs. Tortoise heard the joke,
She to the situation woke,
A sign prepared, with much dispatch,
And hung upon her neighbor's latch.

Weary and worn the Hare at last
Arrived at home, and stood aghast.
A message hung upon his door!
Chagrined he read it o'er and o'er,
And frantic grew the more he read,
For this is what the message said:

"You silly thing, you have no sense,
You boast of speed, 'tis mere pretense.
Your legs are sadly out of date,
Fatigue, defeat, upon them wait.
Success will ne'er your ways attend
Till you NEW METHODS use, my friend."

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The TELEPHONE REVIEW

New York October 1916

VOLUME 7 NUMBER 10

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

Published monthly by the New York Telephone Company. U. N. BETHELL, President; WALTER BROWN, Secretary and Treasurer. Publication Office and Principal Place of Business, 15 Dey Street, New York.

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VOL. VII. OCTOBER, 1916 No. 10

Millions of Calls a Day

THERE are on an average more than 26,000,000 central office calls a day over the telephone lines of the Bell System. This, as a matter of course, does not take into account those other millions of calls also every day between departments in the establishments of private branch exchange subscribers. These latter perhaps average higher in relative importance, since they are usually "strictly business," but not reckoning them, it is impressive to think of the service the 85,000 operators in the Bell System are performing for the public every day, and we may say especially the nearly 15,000 operators of the New York Telephone Company.

A subscriber said recently: "I was exasperated when it took ten minutes to get a call through to —— [naming a small country village several hundred miles away on a rural line]. It usually takes only two or three." Another subscriber said: "I was talking to Fort McAllen, Tex., twenty minutes after I put in the call." There was never a line in Europe as long as from New York to Fort McAllen, and no service in Europe as good as the average in America. Probably neither of these subscribers even gave a thought to the operators, and certainly the operators treated them both alike when it came to serving them. A line may be busy and delay completing a connection, and again it may be free, but the operators can be relied upon to give the same quality of service, which is always performed sympathetically because it is natural for them to do it so and they are trained in it.

Never Too High to Telephone

TELEPHONING from a mountain-top to New York or other distant cities is the latest dictate of fashion at Lake Placid in the Adirondacks. Mountain climbers who reach the summit of Whiteface, 4,871 feet above sea level, like to tell their friends in the less cool and delightful regions of their attainments, and they like, too, to use the telephone which is at the highest elevation of any in New York State. The instrument was put there not primarily to foster fashion's fads, but for the forest fire observer.

A Relic

THE Telephone Company of New York was owned by Hilborne L. Roosevelt and Charles A. Cheever, the pioneer promoters of the business in New York.

The reproductions on page 310 are from a copy of a circular obtained by Dr. Edwin L. Fancher at the exhibition of the American Institute the same year —1877, and preserved in the museum of the Orange County Telephone Company of which Dr. Fancher for many years has been President.

The telephone was on exhibition at the American Institute and won the Medal of Progress. The instruments were attached to telegraph wires, and Dr. Fancher says: "I tried hard to talk over the line at the time, but must confess that it was not a great success."

The Company made an active canvass for business, but lasted only ten months. Mr. Seth Low was canvassed in January, 1878, for a line for his firm between 46 Howard Street and 32 Burling Slip, but the report of the canvasser reads: "Mr. Low says will never answer their purpose."

Note the use of the word "never"! But that was in 1878.

Congratulations

OUR sister journal, *The Telephone News*, Philadelphia, became a monthly with the publication of the September number. We extend hearty congratulations upon the change from a semi-monthly, and the splendid issue which marked the beginning of a new era. Its readers may miss for a while the accustomed second issue a month, but they will soon find that Mr. Wisse gives them more than enough to ponder over and interest them between dates, and he will be able to devote his fine ability to better effect, being relieved of the necessity of going to press so often.

A real sister journal in a double sense has reached us. It is the new *Michigan Belle*, published by the Traffic Department of the Michigan Telephone Company. The new publication starts out most auspiciously, and we wish it a brilliant career under the skillful editorship of Mrs. Mina Humphrey Varnum.

The Finder of Men

MR. F. H. DARLING, superintendent of the Cranford Farms, Derby, N. Y., called at 6.08 one afternoon, read an advertisement in a newspaper to the toll operator, and asked that the parties be located if possible. The advertisement read as follows:

TWO college students want work on same farm; experienced in all ordinary farm work, especially with horses. Can formulate balanced rations and work Babcock testers. Any reasonable offer accepted. I. B. T., 128 Dryden, Ithaca, N. Y.

The call was passed at 6.10 P.M.; at 6.13 a report of "unknown" was received from Cornell University. It was found that a telephone was located at the address given in the advertisement, but

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no answer could be obtained to the telephone. The "don't answer" report was again received at 8.05, 8.15, 8.55, and 9.37 P.M.; upon receiving the last report Mr. Darling stated that he would accept the call on the following day if it could be completed.

The next day at 8.57 A.M. the call was again tried; at 9.16 A.M. a report was received that "the boys who advertised in the paper could not be located, but that it would probably be possible to talk to them at 1 P.M." At 1.32 the call was again tried and at 1.48 P.M. a report that they could be located was received. An appointment was made, however, to talk between 6 and 7 P.M. and at 6.07 P.M. the call was again passed, and at 6.13 P.M. the parties were located and the connection established.

Mr. Darling subsequently wrote a warm letter of appreciation for the service he had received.

Proposing by Telephone

Instead of annoying the girl any more why doesn't the man who proposed a thousand times set up as a teacher of the art? He ought to know how by this time, and there are millions of men that don't.—*The Sun* (*N. Y.*)

The *Sun* is wrong. A thousand proposals that failed are not worth one that succeeded. Better follow the example of the St. Louis man who had been proposing for five years to his inamorata without success, but who called her up when she went on a visit to Los Angeles and got her "yes" by telephone in three minutes. And it cost less than all the years of bonbons, flowers, and theaters.

The Smile in Business

A little booklet intended as a guide for the employees, especially those who come into direct contact with the public using the road, has recently been written by the president of a great railroad.

Emphasis is laid on the great fact that you cannot do good business unless you do it agreeably.

"A railroad sells transportation, but it sells more than that, it sells 'service.' Railroad service begins at the ticket office and ends at the station where the patron alights. BETWEEN THESE TWO POINTS SHOULD STRETCH THE RAILROAD SMILE. It helps business."

The writer goes on to elaborate his smile theme, and concludes by saying that good service depends not only upon what you do but upon the way you do it. That is true, whether you are a clerk in a drug store or a brakeman on a railroad. Smiles are remembered just as well as frowns. The one helps to make the service good; the other helps to make it bad.

There is a heap of sense in that booklet, and all of us can take it as applying to ourselves. Be very sure that even if he doesn't actually ask for it, an employer does not want a clerk in his employ who can't smile.

A smile is a part, and a large part, of efficiency. Courtesy, affability, and a pleasant way of answering questions are quite as important in most businesses as promptness, exactness, and a trained mind.—*Globe and Commercial Advertiser* (*N. Y.*)

The first great leader in this attitude toward the public, as well as in full and frank publicity—"taking the public into its confidence," as Mr. Vail has expressed it, was the Bell System. "Telephone courtesy" and "The Voice with the Smile Wins" have done more to change business manners—or lack of manners—than anything else, because they have been tried and proved to be successful.

We can keep the leadership only by continuing to deserve it.

Spirit of Service

A FLUSHING subscriber wrote our Company under date of September 7 as follows:

The Manager, New York Telephone Co., Flushing, N. Y.

DEAR SIR: I desire to thank you for the very prompt and satisfactory manner in which our order for an additional alarm bell in our kitchen was executed. Mrs. ——— wishes me particularly to speak of the careful and courteous way in which the young man attended to his work. I think his name is Burke. It is a pleasure to have such persons come into a home when it becomes necessary to have work performed. I have not forgotten the promptness with which on a certain stormy Sunday several years ago, in response to a personal request, made because my mother was very ill, you replaced my wire which had been blown down by a severe snow storm.

Yours very truly,
(Signature)

The original of this letter, as is customary in such cases, was referred to the employees who received the commendation, and it was returned to headquarters with the following comment:

We do not feel entitled to any great credit for our promptness in executing the order—that is part of the job. I am more than gratified that Installer J. Burke has been commended for the "careful and courteous" way in which he attended to his work.

The impression must not be obtained that he is the only one, among our forces, who has cultivated that "careful and courteous way," as the public have become so accustomed to it, as part of the "Bell Service," that comments of this kind are as a rule infrequent.

B. R. YOUNG, *Wire Chief.*

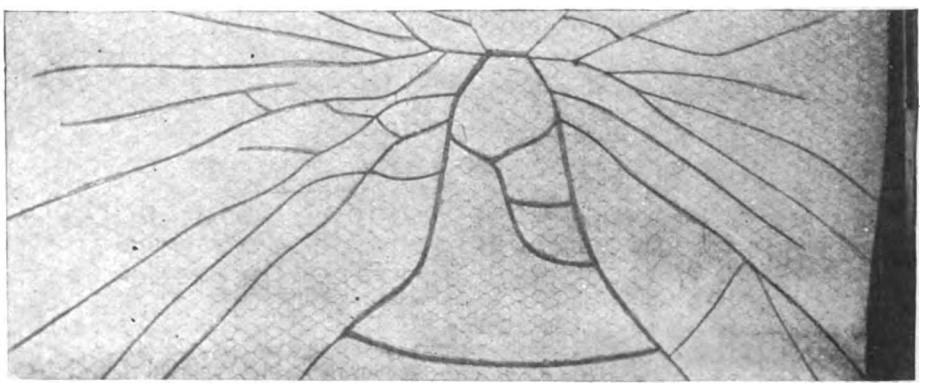
The comment is considered as interesting as the subscriber's letter, and we print them both in evidence of the "spirit of service" which is characteristic of telephone employees and its effect upon the observing public.

Once a Boarding House

THE address, 15 Dey street, is so universally known as the headquarters of the New York Telephone Co. that it may be interesting to many to learn that on this now famous site peopled with busy workers day and night, a humble boarding house stood one hundred years ago. We are indebted to Mr. J. W. Greene, Jr., of the Real Estate Department, for a copy of an advertisement which appeared in the New York *Evening Post*, June 3, 1819, reading as follows:

GENTEEL BOARDING AT 15 DEY STREET

Genteel Boarding.—Board may be obtained for a few gentlemen, or a family, on reasonable terms, at No. 15 Dey street. The situation being very near Broadway, renders it convenient to gentlemen doing business in that street, as they would be near their business without residing in the bustle of Broadway.



THE above picture is from a photograph of a window in Room 2412, 195 Broadway, occupied by the Accounting Department, A. T. & T. Co., and shows how the glass was cracked into the shape of the Blue Bell by the Black Tom explosion.—A. W. Mothersill, Traveling Auditor, A. T. & T. Co.

"Universal" Service

ONE of our subscribers in Syracuse lost a satchel and advertised for it in the daily papers, giving only his telephone number. The satchel was found by a resident of Dryden, N. Y., who read the advertisement in the Syracuse paper, but not having a copy of the Syracuse telephone directory, wrote our office in Syracuse giving his name and address and asking that the owner of the lost satchel write him describing his property and making a claim for it. This was done, and the owner came again into possession of his belongings. Another case of *Universal* Service!

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What's in a Name?

"Cathedral"

The Cathedral of St. John the Divine as it Now Appears

THE selection of a name for a new central office may seem a very simple matter—just to think of a nearby avenue or park, or a great General, and decide upon that name for the proposed exchange. But such is very far from the actual fact. This question is really a very momentous one, and one which requires the attention of certain traffic engineers who devote much of their time to the careful selection of these exchange names, the attention also of general officials of the Company, and finally the Executive Committee, whose approval must be given before the adoption of one of these new central office designations is decided upon.

The fundamental plan of central offices for several years to come indicates the relative location of each new central office, and when growth records, which are carefully and periodically consulted, show that relief of present exchange switchboard or switchboards will soon be required, the naming of the new district is taken under consideration almost coincident with the decision that it shall be created, and the new name must be ready for use by the time the directory listings are needed for inclusion in a designated issue of the telephone book.

The First Step

THE first steps in choosing a new name are taken in the office of the Traffic Engineer, where experts especially assigned to the work maintain numerous card records and files of information, which are constantly being augmented.

A name to be accepted must meet numerous requirements and qualifications: It must be telephonically euphonious and not easily confused with other central office names; it must not be too long nor too easily abbreviated; it must be simple of pronunciation, and it should, if possible, be appropriate to and distinctive of the area to be served.

Let us take, for example, the name "Cathedral" and follow the various steps in the process of elimination and selection, for elimination is only second in importance to selection.

Selection

THE name "Cathedral," adopted in August, 1914, and used for the first time in the October, 1914, issue of the Telephone Directory, was given to a district planned three years before, but the location of which was later changed. Our files show that as early as July, 1911, a "Memorandum relative to the Name for the Second Morningside central office" was written, containing a list of all the names of avenues and streets—past and present—parks, descriptive names and others not descriptive, and the names of owners of former estates in the ultimate district, which was bounded by 125th street, Lenox avenue, 136th street, and the Hudson River. All the names which might possibly be eligible for this use were included in the list; it was carefully scanned for any that would obviously be confused with existing central office names and if any appeared, they were eliminated at the start.

Before the matter had progressed so far as a decision, however, the growth of

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the telephone in the Morningside District forecast a radical change in the area to be comprised in the new district, and the creation of still other districts. Accordingly in June, 1914, the ultimate boundaries of the district under consideration were definitely changed to the North River, 116th street, Lenox avenue, and 110th street or Cathedral Parkway.

It was therefore necessary to prepare an entirely new list of names for the new central office, and repeat the entire process of selection.

Elimination

THIS new list of names was finally reduced by elimination to six, one of which was Cathedral. These names were then carefully tested in the same manner as in the first instance and recommendations were made on the basis of the experiments. These recommendations were submitted to the Engineer, Division Commercial Manager, and Division Superintendent of Traffic, with a brief statement of the reason for selecting each name and of its standing in the test that had been conducted. Here other factors entered, and although "Cathedral" did not show up as well in the test as others, it was finally adopted as being by far the most characteristic one that could be found for the district to be served, both at the present time and, increasingly, in the future.

Testing Names

IN addition to the appropriateness of a central office designation with reference to the location of the district, the ease of transmission and accuracy of understanding are the most important characteristics.

The appropriate names that have been selected for test, and about 150 names of existing central office districts, are listed in such a way as to make each name that is being tested appear in association with each existing name with which it might by any possibility be confused over the telephone. Each of these names, therefore, is repeated a number of times in the list, so that the completed list comprises in all from 500 to 800 listings. Copies of this list are then distributed to the central offices where the tests are to be conducted.

First, an operator assigned to the test is given a list to read in order that she may become familiar with the new names. This operator then takes her place at a telephone instrument and records the names and numbers as they are read to her over the telephone by a second operator who has been furnished with a list for this purpose. When this list has been completed, the first operator returns to her regular work, and the operator who has just read the list takes her place and records, while a new operator does the reading.

This process continues until the number of recorded lists assigned to this central office has been completed.

The lists are made up in such a way, and are read over the telephone and recorded by different operators a sufficient number of times, so that each of the new names will be tested approximately 1,000 times.

In many of these tests the names are read over the telephone and recorded in the aggregate from 80,000 to 100,000 times.

Each central office name in the list is preceded or followed by a fictitious number, which also plays an important part in the test.

A careful record is kept, showing the accuracy of understanding, the number of errors in recording, the confusion between names, and many other points of interest which may be noted at the time.

These statistics are then carefully analyzed to determine the ease of transmission and the facility of repetition. In this way is determined from a Traffic standpoint the best name to be assigned to a new central office district.

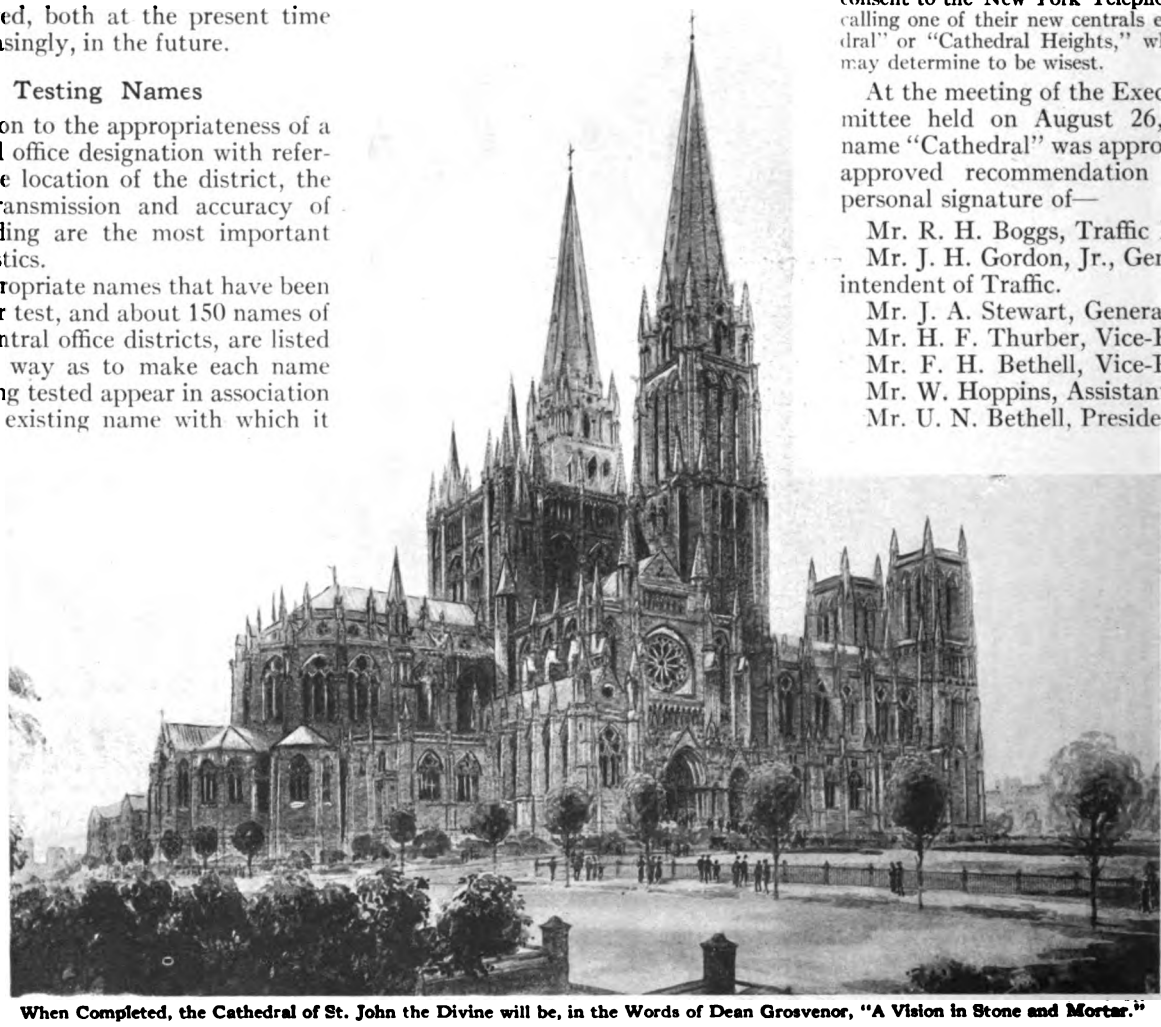
Decision

BEFORE definitely accepting the name it was considered advisable to learn whether or not there would be any possible objection to the use of the name on the part of those most closely connected with the Cathedral of St. John the Divine. Accordingly we called upon the Dean of the Cathedral and explaining the situation to him asked for his approval of our selection. The Dean talked the matter over with Bishop Greer and then wrote to us as follows:

I have just received word from Bishop Greer and both he and I, in behalf of the Trustees of the Cathedral of St. John the Divine, very gladly consent to the New York Telephone Company calling one of their new centrals either "Cathedral" or "Cathedral Heights," whichever they may determine to be wisest.

At the meeting of the Executive Committee held on August 26, 1914, the name "Cathedral" was approved. This approved recommendation bears the personal signature of—

Mr. R. H. Boggs, Traffic Engineer.
Mr. J. H. Gordon, Jr., General Superintendent of Traffic.
Mr. J. A. Stewart, General Manager.
Mr. H. F. Thurber, Vice-President.
Mr. F. H. Bethell, Vice-President.
Mr. W. Hoppins, Assistant Secretary.
Mr. U. N. Bethell, President.



When Completed, the Cathedral of St. John the Divine will be, in the Words of Dean Grosvenor, "A Vision in Stone and Mortar."

The name "Cathedral" as a central office designation, therefore, appeared for the first time in the October, 1914, issue of the Telephone Directory, and was first

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used on November 16, 1914. The subscribers at present, some of whom were transferred from the Morningside switchboard, are working in the Harlem switchboard, for "Cathedral" is as yet a theoretical exchange. It is expected, however, that the new "Cathedral" switchboard will be completed in June, 1917, when this exchange will be known as a physical exchange for the first time and will be located in our new building on 108th street.

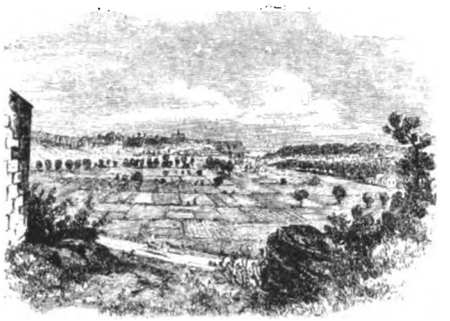
Appropriateness of "Cathedral"

CATHEDRAL Heights is the name by which the major part of the ultimate district is now known, and Cathedral Parkway forms the southern boundary of the district, both taking their name from the great Cathedral of St. John the Divine which crowns the rocky slopes of the Heights. For twenty-five years the Cathedral has been building,

116th Street and Riverside Drive Half a Century Ago

but it will be a much longer period before this great structure which will dominate the whole upper end of Manhattan Island rises to its final impressive proportions. Like the old world cathedrals, St. John the Divine is planned to be a great religious edifice where anyone and everyone may come and go independently, to be essentially a part of the life of the city. To do this in modern New York offers a very different problem from that of the medieval cathedrals. As one way of meeting it, the "Seven Chapels of the Tongues" are designed for services in Swedish, German, French, Spanish, Italian, Armenian, and Chinese, to be used by those hundreds of residents of New York who speak only these languages, until they become familiar with English and pass to the services in the great body of the Cathedral.

The first steps toward the erection of the Cathedral were taken in 1872, but comparatively little was accomplished until the Rt. Rev. Henry C. Potter became Bishop of New York in 1887. He revived the project and a site was purchased, the section of the heights



About 1860, Showing Farm Lands. Now a Part of Cathedral District

bounded by 110th street, Morningside Drive, 113th street, and Amsterdam avenue being chosen. Here during the Revolution the Battle of Harlem Heights was fought and some of those who fell are buried in what is now the Cathedral close. The steep eminence affords an excellent situation for the Cathedral, accentuating by its height and the wide space of Morningside Park below the impressiveness of the great structure itself. The solid rock of the hill, too, makes a worthy foundation to support the Cathedral which is to endure for centuries. The cornerstone was laid in 1891, and the monolithic columns, the great arches and dome which have been slowly rising since that time, have grown into the consciousness of New Yorkers as the dominating feature of that section of the city, foreshadowing somewhat the impressive influence of the Cathedral completed.

It was particularly appropriate, therefore, that "Cathedral" should be woven into the intercourse of the city as a central office designation.

Harlem Lane in 1865. The Present St. Nicholas Avenue

A Highly Complimentary Letter from Gen. Sadler

On Bell System Preparedness and Efficiency

STATE OF NEW JERSEY,
OFFICE OF THE ADJUTANT-GENERAL
SEA GIRT, July 26, 1916.

Mr. J. A. Waterbury, District Manager, Bell Telephone Company, Asbury Park, N. J.

DEAR MR. WATERBURY: I have been delayed in thanking you for the splendid service which you rendered the State of New Jersey during the mobilization of the troops at Sea Girt, because of the many details I have had to care for since they left for the border.

The Bell Telephone Company gave the people generally a real sample of preparedness. The pleasant and enthusiastic way in which they took up the work of locating the large number of telephones that were placed on the main camp ground and at the cavalry camp was inspiring. The service rendered headquarters, especially on the long distance work, which was so important, could not have been improved upon, and I feel that we owe you a debt of gratitude.

If many of those who, for years, have been talking about preparedness and whose business it is to be prepared, had been half as ready and had shown the same kind of a disposition to help that the Bell Telephone Company displayed, things would have moved in much better fashion in most States.

I do not know the names of your officers who came to Sea Girt and went over the plans with me and so vigorously put them into effect after they were agreed upon, and hope you will explain to each one of them the appreciation of our State for their prompt and efficient work.

Very sincerely yours,

(Signed) W. F. SADLER, JR.,
The Adjutant-General.

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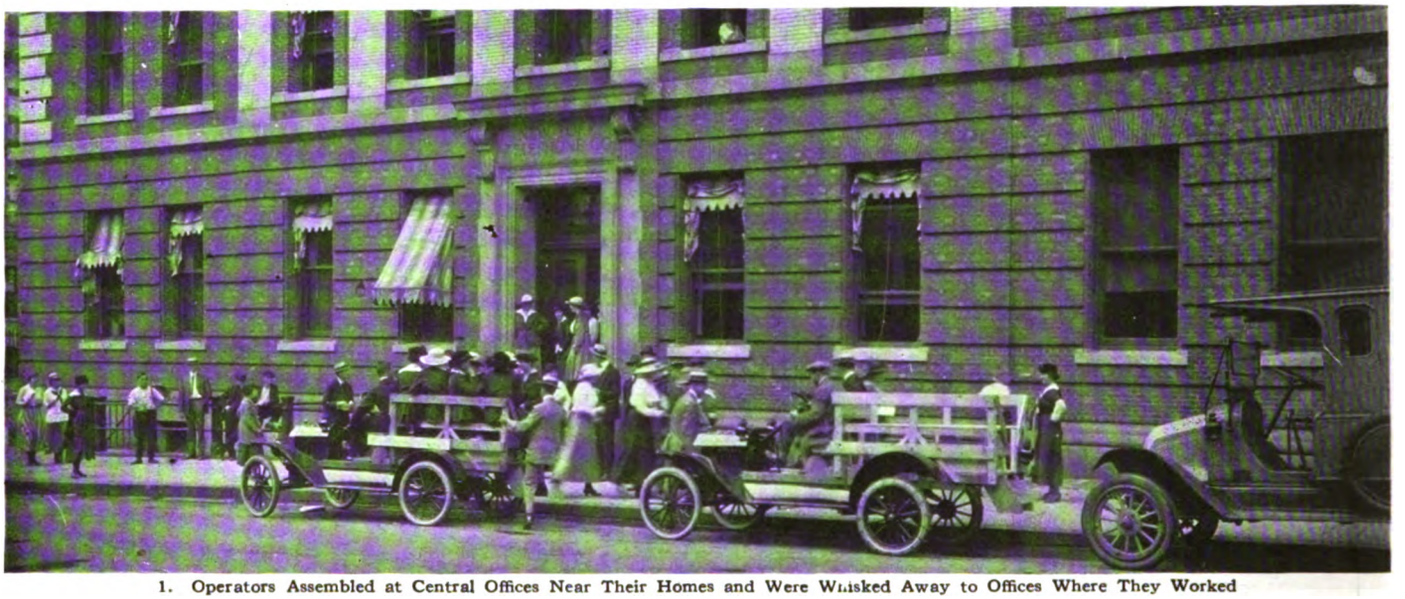
Merely Preparedness



1. Operators Assembled at Central Offices Near Their Homes and Were Whisked Away to Offices Where They Worked

WHEN the wintry skies lower, and the weather man predicts a blizzard, it is a signal to the Telephone Company to prepare for maintaining the service, and every means possible is utilized that the physical plant may be kept in working order so that the business of the country which is transacted by telephone may proceed without interruption.

There is an old nursery rhyme which runs thus:

The north wind doth blow
And we shall have snow,
What will poor robin do then,
Poor thing?

Poor robin can only stick his head under his wing, poor thing, but in the telephone business there are instances without number in which, so far as human power and unlimited resources could accomplish it, the persistency, ingenuity, and hard work of employees of the Company, individually and in coöperation with each other, have kept the plant in working order, or restored it to service with almost incredible speed when damaged, and manned the switchboards in the central offices with bright and smiling faces of operators who cheerily answered the subscribers with "Number, please."

2. Touring It Down Fifth Avenue

3. Arriving at Their Destination

Upon every occasion that an unusual demand upon the plant and service in

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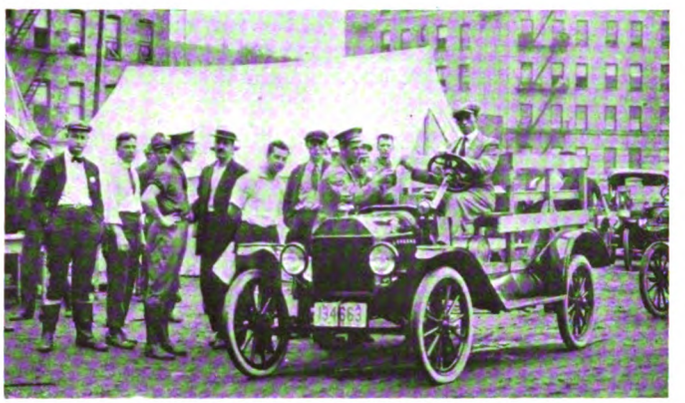
4. Showing About One Third of tne Cars Parked in a Vacant Lot

the Telephone Company seems imminent, steps are taken in advance to meet the condition if it arises.

A heavy snowstorm occasionally makes it necessary for the Company to lodge and feed its operators near their central offices, so as to have them in readiness for their work with the least discomfort at the appointed time.

A big convention which might largely increase traffic over the lines brings forth in preparedness extra operators to handle the traffic. The development of a new suburban town calls for the installation of telephone plant and equipment to be ready when the need arises. Even a rainy day, which only keeps other people at home, brings out more operators to handle the calls which enable the stay-at-homes to attend to their affairs and still keep their feet dry.

When rumors first began to circulate that transportation facilities might be interrupted in New York, thereby making it difficult for the men and women in the telephone business to reach their offices, preparations began for the purpose of keeping the service going, just as when there is any other danger of interruption.



5. Chauffeur Receiving His "Sailing Orders"

The only consideration in the mind of the Company was to get its employees to and from their work, so that the public might have the benefit of uninterrupted telephone service.

The duty of arranging for the transportation of the operators was assigned to the Traffic and Plant Departments. There was nothing more definite than rumors until late in the afternoon of Wednesday, September 6, when it immediately became necessary to put all plans into action. So thorough had been the preparation, and so hearty was the response of all employees when called upon to cooperate in carrying out these plans, that before five o'clock Thursday morning, September 7, 185 Ford cars were fully equipped as busses, each with a chauffeur and guardian, parked in a vacant lot at 142d street and Lenox avenue, ready to start out at six o'clock, over routes that had been prepared, to pick up operators who had been directed where to be met, so that

6. Dispatchers and Clerks in Tent Headquarters

7. Chauffeurs and Guardians Receiving Their Assignments

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they would reach their different exchanges at their usual hours of reporting.

Mr. R. H. Boggs, Traffic Engineer, had charge of coördinating the traffic forces, and he and his assistants worked days and nights in locating the operators and arranging the routes. The problem of handling them was in charge of Mr. A. W. Allen, Superintendent of Buildings and Supplies. On Wednesday an order was given for one hundred Ford cars, which had been held under option, and beginning at five o'clock that night these were delivered at the rate of twenty an hour. A force of about forty carpenters, and a large number of machinists and mechanics, worked all night at the garage in Long Island City, equipping these cars and about eighty-five others which the Company had available for this use. Only Ford runabouts were used, as they were found the most convenient and adaptable for the purpose. More than 250 men in the Metropolitan District volunteered from the different departments (chauffeurs, mechanics, cashiers, clerks, men of all branches of the service) to operate the automobiles, and about as many more to act as guardians and starters. The other departments made such arrangements as time and opportunity permitted for handling their forces.

Clerks, stenographers, operators, mechanics, and officials, all coöperated with enthusiasm and intense interest in maintaining and adding new luster to the traditional Bell telephone spirit of service.

The Human Side

IN the ordinary use of the telephone there is nothing to take away the attention of the subscriber from whatever he may have to say and direct it to the means of communication. That is, unless he is impatient and imagines the service is not up to its usual superlative excellence. Some subscribers occasionally realize afterward, however, what the telephone has meant to them, and letters such as the following are always most highly appreciated, especially because they show the human and tender side of our business and make us realize how it affects the lives of others:

NORTHPORT, L. I.

N. Y. Telephone Co., Huntington, L. I.

DEAR SIR: I want to take this opportunity to thank the operators and your staff for the wonderful service I was given during our great fight for our children.

It was your excellent service that enabled us to get in touch with doctors and nurses that were needed at once.

Thanking you again, I am

Yours very truly,
(Signature.)

For manners are not idle, but the fruit
Of loyal nature and of noble mind.
Tennyson.

Imitation That Grows Up to Reality

MISS C. E. CARR, chief operator at Lakewood, N. J., describes an amusing incident of the early education of a future business man and undoubtedly a very extensive user of the telephone, if his early appreciation of its importance may be taken as a criterion. Miss Carr writes:

WHILE waiting for my train at the Red Bank station this morning, a little lad of about six years came in with his mother. He walked to the telephone booth, saying, "I must call the office as father does every morning."

He consulted the directory for the number. After finding the correct number, although he could not reach the receiver he made believe hold it to his ear while giving the number to the operator as "Cortlandt 4567, please." He acknowledged the imaginary repetition by the operator with "That's right, Central."

After the average time it takes to establish a connection with New York, he closed the booth door and started to talk. Upon finishing his make-believe conversation he walked out of the booth and said to his mother, "Everything is fine at the office and I won't have to go to the city to-day."

The incident gives us the thought that children are good imitators and if the telephone users of the future are to know how to use the telephone correctly, the telephone users of to-day must set them the example of correct telephone usage.

Telephone Restores Hearing

IT is a well-known fact that the use of the telephone makes the sense of hearing keener. More marvelous still is the experience of Felix Bonvouloir, a deaf employee of the Royal Typewriter Company in Hartford. As a joke he went to the telephone to pretend to listen to the conversation of a friend, and, to his surprise and amazement, he actually heard his friend speak over the wire the first words he had heard for nineteen years! "I was terribly frightened," Mr. Bonvouloir is reported to have said later, "and for a moment did not know what to do. Then I realized that my greatest hope—to hear—had come to pass!" Mr. Bonvouloir was stricken deaf and dumb by an attack of scarlet fever when a baby, but had partly overcome his dumbness. He was graduated from the American School for the Deaf in 1905, after having been a pupil there for ten years. He is treasurer of the Hartford branch of the National Fraternal Association of Deaf Mutes, with headquarters in Chicago.

"Not on Speaking Terms"

"THE recent storms in Westchester have caused considerable trouble to the wires, and naturally have brought varied complaints from subscribers to the Commercial Department," writes Miss M. L. Noud, cashier at Greenwich Commercial. "Perhaps the most amusing complaint we have received was one from the subscriber who said: 'I don't know what's the matter with my 'phone, it won't speak—it was all right this morning, but it hasn't spoken since.'"

A Long Way Around

SUBSCRIBERS rarely seem to think that the Telephone Directory holds anything but a list of subscribers and their telephone numbers. The pages on "General Notices for the Information of Telephone Users" are consistently ignored by most subscribers, although they will go to surprising lengths and infinite trouble in roundabout ways to learn the facts contained therein.

The Ruse Worked

A young lady took down the receiver and discovered that the telephone was in use. "I just put on a pan of beans for dinner," she heard one woman complacently informing another.

She hung up the receiver and waited. Three times she waited, and then, exasperated, she broke into the conversation.

"Madam, I smell your beans burning," she announced crisply. A horrified scream greeted the remark, and the young lady was able to put in her call.—*The Christian Endeavor World.*

VOICE AT THE OTHER END—Hello! Is that you, darling?

THE MAIDEN—I'm afraid you have the wrong number, sir.—*Life.*

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The Telephone in Sock and Buskin

By Dorothy Thorne

BEHIND the footlights or behind the scenes, indoors or out, on the circuit or on Broadway—in every variety of dramatic production to-day the telephone is in some way a star performer.

Playwrights and producers have been quick to see the artistic possibilities of the telephone and have used it to good advantage in "getting over" to the audience the necessary exposition at the beginning of the play. What the soliloquy accomplished for the Elizabethan drama, in the way of self-revelation of the characters, the telephone conversation does with far more convincing naturalness for the modern play.

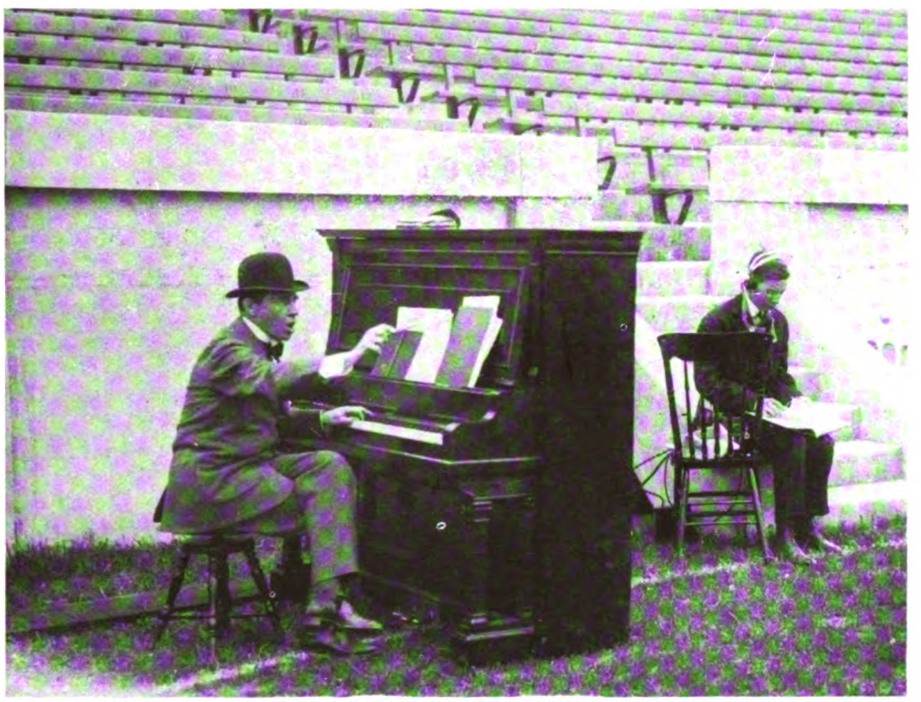
The tendency has sometimes been noticeable to carry this device too far and strain the probabilities of the situation by too great volubility at the telephone. Mr. J. M. Barrie picks up the weakness for especial attention in his burlesque, "The Slice of Life," which appeared a few years ago with Miss Ethel Barrymore in the leading role. "Is this you, father?" she asks in a languid voice of someone at the other end of the wire, "this is your daughter, Mrs. Hyphen-Brown—you remember."

But a good thing cannot be spoiled, even with Barrie's inimitable humor directed against it, and the telephone's place on the American stage remains unshaken—firm as the happy ending which cannot be dispensed with for long. In truth the place of the telephone in contemporary drama could hardly be otherwise than unshaken as long as the stage purports "to hold, as 't were, the mirror up to nature," and in this fact lies the strength of the device. For to kill two birds with one stone is a treasured artistic object of the dramatist, and to portray a custom of the country while making the necessary explanations, must bring supreme satisfaction to the dramatic soul.

Whether, however, his appreciation of the helpful instrument placed at his disposal by the army of telephone workers will ever find expression in the way suggested some time ago in a verse published by the *Evening World*, is a matter of vast uncertainty. The suggestion is none the less worthy of repetition:

The Helpful Telephone

Oh, what would we do in the drama to-day
If there was no telephone handy?
It's in ev'ry playlet and in ev'ry play.
An adjunct that's certainly dandy.



STAGE DIRECTING BY TELEPHONE

In the Granville Barker Outdoor Productions of the Greek Plays in the Various Colleges Throughout the Country and in Public Stadiums, the Stage Director Would Be Too Conspicuous at His Usual Place in the Wings (if There Were Any), So He Is Placed at a Telephone in Some Out of the Way Corner and Sends His Directions to the Players by Telephone.

The villain, of course, has to 'phone the sweet maid.
The hero must 'phone the detective;
Without it the drama could hardly be played,
Unless it were plainly defective.

It's helpful indeed in the planting of plot,
It cuts down the cast half a dozen.
And atmosphere! Gee, but it offers a lot,
With all of its ringin' and buzzin'.
"First aid to the author"—they've nicknamed it well:
Each week he should really be sharing
The royalties paid him with Alex G. Bell,
And thus a just debt he'd be squaring.

Al Fresco Productions

IN the great out-of-door productions which are becoming undeniably a characteristic expression of dramatic feeling in this country, the telephone plays a no less important role than in the regular drama. Although its field of action is not before the eyes of the spectators, it is constantly at work. Granville Barker's productions of Greek plays in the Yale Bowl, the City College Stadium in New York, and other outdoor amphitheaters, in 1915, are good examples of this new form of telephone usefulness.

Here there is little scenery to screen the off-stage activities of the cast, and call-boys cannot be dispatched hither and yon "behind the scenes" to warn the actors of approaching cues. Consequently the stage director sits in an obscure corner of the great arena, or under the grateful shadow of an abutting concrete wall, and with telephone in hand sends the timely warning. The picture of Agamemnon or Medea responding to the summons of a telephone is perhaps astonishing! But the anachronism proves itself eminently satisfactory nevertheless.

The most recent example of this type of telephone action in dramatic art is that afforded by the production of the masque, "Caliban," at the City College Stadium last spring. Over 1,500 persons took part in the performances, and to manage the entrances of this enormous cast from the several widely separated exits was a task of no slight proportions. It was successfully handled by the installation of a telephone system with instruments at each exit at intervals around the great circle of the Stadium. Irving Pichel, the stage manager, sat at his instrument, and the man in charge at each exit stood at the telephone and received the directions, assembling the choruses, and managing the entire business of entrance for the hundreds of performers in each interlude.

Not the handling of the participants only was done by telephone in the performances of "Caliban." The telephone system reached also to the several lighting centers in the top of the Stadium, opposite the stage proper, and in one case 450 feet from it. The electricians who were managing the complicated and varied lighting effects of the production received their cues direct by wire from

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THE TELEPHONE IN THE "MOVIES"

Doc. Crane and Adele Farrington in "The Journal of Lord John"

An Important Incident in "The Supreme Test'

Betty Compson and Eddie Lyons in "The Newlyweds' Mixup"

Louise Lovely in "Bobbie of the Ballet"

The Telephone Is an Important Weapon in "A Fight for Love"

Jack Holt and Ruth Stonehouse in "The Phone Message"

THE telephone is indispensable in the "movies" for the same reason that it is indispensable in modern everyday life. It is not used on the screen as a makeshift only, but it also plays an important role and "adds verisimilitude to bald and unconvincing narratives."

No other stage property equals it in adaptability, for there is nothing so interwoven in the affairs of life, some

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THE TELEPHONE IN THE "MOVIES"

Herbert Rawlinson in "They Wouldn't Take Him Seriously"

Digby Bell in "Father and the Boys'

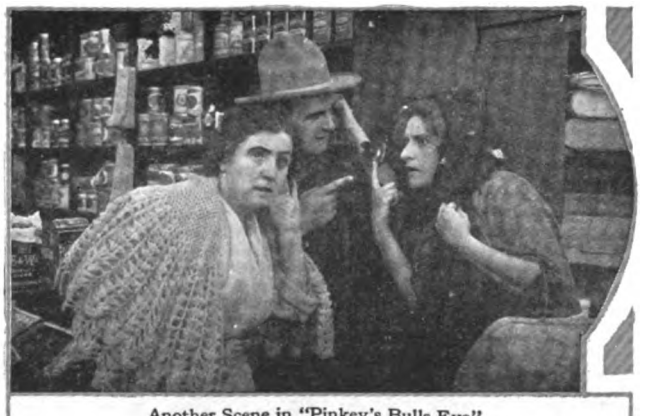
Barbara Tennant in "The First Nugget"

Ben Wilson and Dorothy Phillips in "Harmony in a Flat"

Zoe Ray in "Pinkey's Bulls Eye"

Solving the Mystery in "The Haunted Bell"

Peggy Coudray in "Promissory Notes'



Another Scene in "Pinkey's Bulls Eye"

phase of which every "movie" possessing human interest must portray—or caricature. The naturalness of the scenes shown in the accompanying pictures, for which we are indebted to the Universal Film Company, is convincing.

In one way or another, "everybody's doing it," and how the telephone may be used practically can be seen in the "movies."

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Mr. Pichel. The music, another important feature of the masque, was also controlled by telephone. An orchestra of over a hundred pieces and a chorus of several hundred voices had to be given the word when the action was ready for their accompaniment. The stage was not visible to them, so no assistance was available from that source, but the telephone from the stage manager's desk supplied every cue.

In the "Movies"

AS to the telephone in the "movies"—it is omnipresent, and its usefulness is demonstrated better by illustration than by description. Facial expression has not always been the important accompaniment of telephone using, voice inflection having been pardonably considered more germane to the situation, but before the camera, as our cuts show, the main business of the telephone is to call into play, on the mobile face of the actor, every emotion which the exigencies of the plot or the delight of the audience may demand.

In Vaudeville

WITH vaudeville, we come to a more highly organized and businesslike use of the telephone than elsewhere in the whole dramatic field. Between the wings and the footlights the stage telephones are as numerous and humorous in skit and sketch as in the regular drama or the movies. But behind the back-drop it is no stage telephone that is at work. It is the genuine article, with the wires of the Bell System vibrant for it in one of the biggest business enterprises of the country. The Proctor interests for example, and the United Booking Offices of America, the largest vaudeville organization in the world, depend upon the telephone to keep things running smoothly. When star attractions suddenly fail at the last minute and other equally popular "drawing cards" must be procured from other cities, it is the telephone that maintains the reputation of the playhouse for having "something good, anyway."

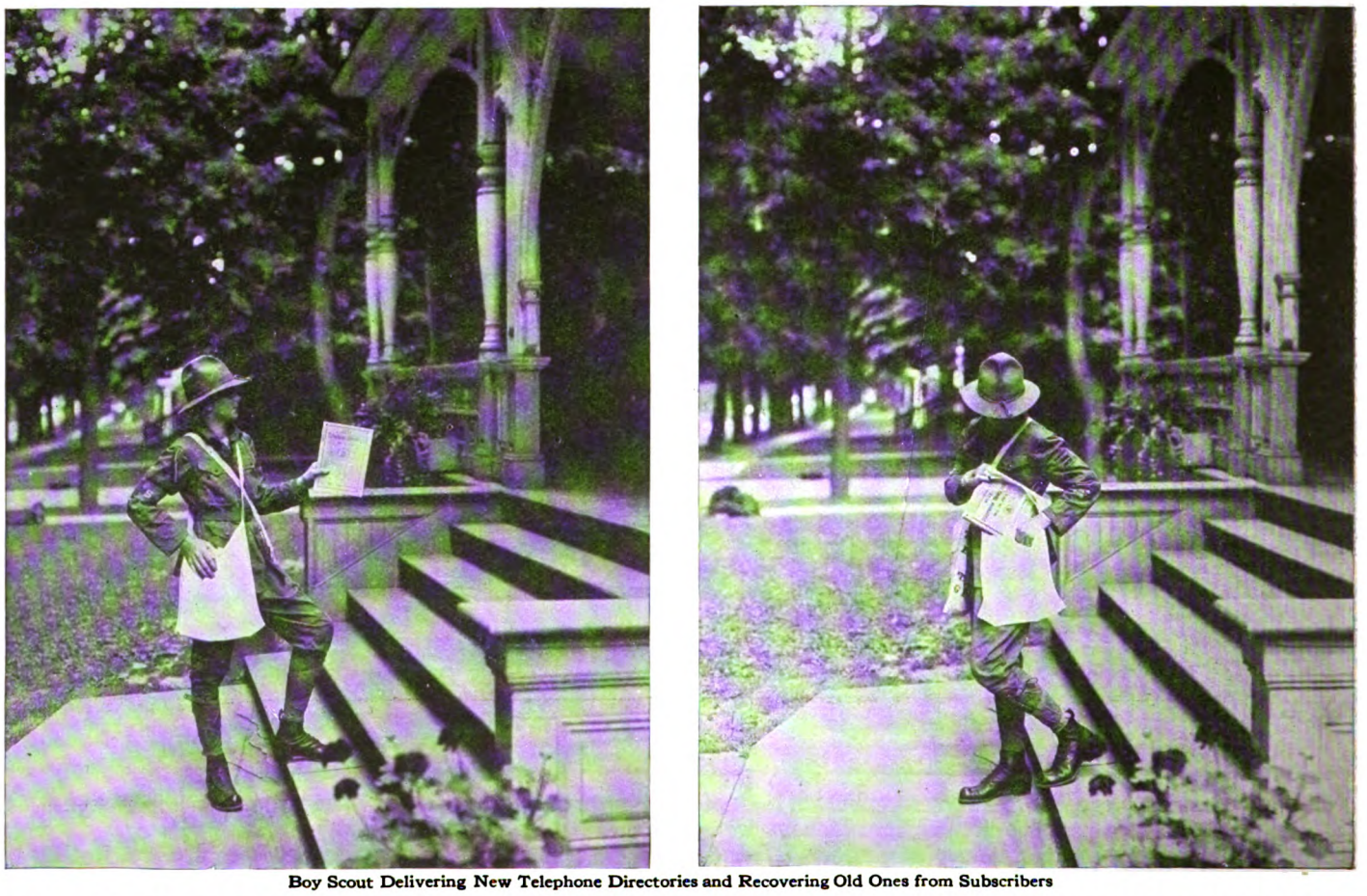
With the theaters of his circuit Mr. Proctor or his associates are in constant touch by telephone, always within speaking distance of the shows sent out from the home offices in New York, regulating the management of the houses, and generally supervising their affairs. With the four New York City theaters the home office is in almost hourly communication over the telephone. Daily calls are put through to the houses in Newark, Plainfield, Elizabeth, Port Chester, Mt. Vernon, Yonkers, Albany, Troy, Schenectady, and Cohoes. At the home office in New York the telephone equipment, consisting of a private branch exchange with five trunk lines, handles upwards of a thousand calls a day.

In all the theaters of this circuit, too, there are intercommunicating systems connecting box office, stage, dressing rooms, motion picture booths, and other important units of the establishment.

To Frighten the Burglar

One of our Albany rural subscribers, upon moving into the city from his country bungalow, was given the option of cancelling his rural line telephone on the short term basis, or of receiving residence suspension rate for part of the winter. The latter method would involve a saving of $4.00 on the regular annual rate. The subscriber decided, however, that he would rather pay the regular rate of two dollars each month because he thought it would be worth at least four dollars to have such a good protection against burglars. The frequent ringing of the telephone bell, even in an unoccupied house, would provide a good means of frightening away marauders.

G. A. HILT,
Senior Salesman, Albany, N. Y.



Boy Scout Delivering New Telephone Directories and Recovering Old Ones from Subscribers

LOCAL MANAGER BRAINARD AT DUNKIRK ADOPTS THE BOY SCOUT METHOD OF TELEPHONE DIRECTORY DISTRIBUTION WITH GREAT SUCCESS

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Our Relationship with the Public

As Viewed by a Traffic Man

By George H. Esler, Traffic Department, Jersey City

WHERE will you find a business that affects more of the general public than ours does? It is a decidedly human element with whom we must associate, and because of this, we must ever be on the alert to our responsibilities. A traffic man must be a man of parts. He must be able to meet every class, every condition. He must be a servant that can foresee the wants of the served (for such is a true servant), and he must be master of himself. Then he becomes a more efficient servant of the public and of the Company.

Nowhere in the business world to-day can you find a better opportunity to study humanity in all its different angles and phases than in our business. "No two blades of grass are alike." Neither are any two subscribers alike. This is one of the stimulants which relieves our work of any monotony. We anticipate some new problems each time we answer a subscriber—some new method of meeting this problem must be devised and, therefore, our knowledge is broadened and our power of judgment enlarged.

Handling Complaints

The complaints we receive are of such a character that each should be handled on its individual merits. Of course, there are exceptions to this rule. On some complaints a general line of action may be followed. Again, on the same complaint it might spell disaster to follow hard and fast rules. It is a question of judgment. We all know that in any well-organized business where any amount of detail is present it is necessary to establish a definite and standard set of rules. These are only guide posts, if you please. Our own judgment must tell us which road we are to travel. Remember, though, we must not swing the pendulum too far and rely entirely on judgment. *Keep an even keel.* The power of judgment is one of the things that distinguishes an executive from a good clerk.

Voice Expression

A pleasing voice is one of the paramount requisites for anyone engaged in traffic work. First, we must consider that the voice is a direct expression of one's personality. It is the only means he has of presenting himself to his hearer. If you were selling merchandise, what would be your first thought? Would it not be to make a favorable impression on your buyer? Next, you would want to convince him of the merits of the goods you were selling. A successful salesman must have these attributes —a pleasing manner and the faculty to impress his buyer with the merits of the goods he sells. The same general principles obtain in the telephone business. When talking to a subscriber you must use a pleasant but dignified tone: one that expresses intelligence as well as courtesy. Not necessarily an assumed dignity—be natural, but the expression of your voice adds weight to what you say. Too much cannot be said regarding voice expression, for even though your language be flowery and your statements convincing, if the proper tone is not used, the listener may misconstrue the thought intended. A subscriber once remarked, "I knew you were a telephone man." When asked why, he replied, "By your voice." Did it differ from other voices? Did it carry the smile with it that it should? That is something we can all cultivate, a distinctive voice individuality that stamps us as telephone men.

Courtesy

Let us think of courtesy for a few minutes. We know that this subject has been discussed at great length during recent years, but it is one that deserves considerable thought. Too much cannot be said of it. Elbert Hubbard once said that "a pleasant, courteous tone of voice will disarm any grouch bent on chewing the rag of a wordy warfare." It will; just try it some time. After all, "Life at its best is but one brief span," and the easiest and pleasantest ways are by far the best ways of traveling this journey. If you pick out the rocky road, you are bound to have many a fall and many a bruise. To quote again one of our modern writers, "It's easy enough to be pleasant when life flows along like a song, but the man worth while is the man with the smile when everything goes dead wrong." Are you worth while? Can you say at the end of a day, "Well, I have made one of my fellow-men see the pleasant side of life to-day"?

Concentration

Concentration is another thing to bear in mind. Did you ever think of the remarkable lesson that is taught us by an ordinary lens? We focus that small object upon some piece of paper or cloth and its power of concentration is such that it will cause the sun to burn a hole in the object it is focused upon. The sun is millions of miles away, yet what causes this phenomenon? *Concentration!* Do you concentrate? Your undivided attention should always be with whatever work you have on hand. That is the only way you can be successful.

Satisfying the Public

We must satisfy the public. The average citizen of the twentieth century is more exacting in his demands than his predecessors were. He wants to know the why for everything that occurs, and if some of his good capital is invested, he demands an equitable return. We must convince him, therefore, of our desire to give him a fair return. To use a homely phrase, "we must give him a square deal." How are we to do this? Most prominent among the means of doing so is to see that he gets a good grade of service. When he makes a complaint, investigate it thoroughly and do everything in your power to eliminate the cause of his dissatisfaction. Convince him of your sincerity; that his interests are your interests. Show him some results, and his next complaint will not carry with it a tone of criticism, but a tone of mutual coöperation. It is here that the folly of set phrases comes in, such as, "I am very sorry this occurred; I will take the matter up for you." Its effect may not be noticeable the first time, but the second time the subscriber hears it, it will form an impression of a pigeon-hole, wastebasket method of handling complaints. Keep away from this method. It lacks individuality. It's harmful.

Coöperation

Coöperation among ourselves and with every other department must exist if the public is to be benefited. "A house divided against itself must fall." We are no exceptions. Subscribers are bound to notice any friction among departments. Therefore, do not criticise the other fellow harshly; rather criticise yourself. You will find enough to do in running your own job properly. However, if you see anything that would help another department, pass it along. If a subscriber's comment received from another department warrants investigation, pass it along in a spirit of coöperation, bearing in mind that we are all one big family, and the public does not deal with us as units, but as one. We preach "Universal Service"; let's practice "Universal Coöperation" and we shall have "Universal Satisfaction" for the public, for the Company, and for ourselves.

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Telephone Proficiency in Middletown

The Orange County Telephone Company

THE telephone service of Middletown, Orange County, N. Y., had its beginnings in October, 1883, when the Bell Telephone Company opened the first telephone office in the city. Newburgh, Walden, Montgomery, and Goshen, all in Orange County, were connected by telephone to Middletown, and in 1884 Port Jervis was added. In 1895 the Orange County Telephone Company was organized by representative business men of the city and began giving service March 1, 1896. A one hundred line magneto switchboard was used with the "common return system," which was later changed to full metallic. The first piece of aerial cable was installed in 1897.

Consolidation

The fallacy of two separate companies rendering telephone service in one community was soon apparent. The service could be only 50 per cent. as valuable as when one company gave it all, and the expense to the subscriber must, of course, be double where two telephones were necessary to reach all subscribers. Consequently the two companies were consolidated in 1905, and the Orange County Telephone Company has become one of the New York Telephone Company's important connecting companies. Subscribers' sets of Western Electric make were gradually substituted for the old equipment, and common battery was used instead of the old magneto, the standard Bell equipment being finally adopted throughout.

On February 5, 1908, a severe fire destroyed the local switchboard. Arrangements were immediately made to secure a new switchboard from the Western Electric Company, and pay stations were temporarily installed in various parts of the city. The troublemen stepped into the breach by acting as messengers, calling people wanted on the telephone to the nearest pay station.

Development Era

On October 1, 1908, Dr. Edwin Fancher took control of the company as president, and a new era in its development began. Additions were made to the cable plant and rural lines were greatly extended. The small exchanges at Pine Bush, Bloomingburg, and New Hampton, N. Y., were rebuilt and the rural service given an impulse which had made necessary the establishment of a fourth rural switchboard, this time at Wurtsboro. Twenty-two small villages around Middletown are now served by the Orange County Telephone Company. As the plant was being rapidly outgrown in 1912, and plans which had been maturing some time were completed, it was decided to lay underground conduits in the city. Up to the present time 31,414 duct feet of conduit have been placed.

The Company serves over 2,400 stations at the present time.

Present Headquarters

A thoroughly up-to-date and well-equipped exchange was opened April 5, 1914. The new building is a fireproof structure two stories in height, with walls built to accommodate a third story if necessary and a thinner rear wall that may be removed in case an addition is needed. At the present time there is room in both the operating room and the terminal room to accommodate double the present equipment. Designed to make possible the rendering of the most efficient telephone service, the building provides ample facilities for rest and refreshment as well as for work.

In the basement are the cable vault, construction storeroom, boiler room, and a shower bath for the men. The first floor comprises the commercial office in the front of the building, with booths for the accommodation of patrons, and the private office of the manager. The entrance for employees is on the side of the building opening on to a hall and stairway giving access to the upper floor. Adjoining this hallway are the Plant Superintendent's office and the terminal room. A room reserved for directors' meetings, the operators' locker room, lavatory, lunch room, rest room, and bath are in the front of the building on the upper floor, while the entire space back of the hall is used for the operating room. A force of twenty-two operators under Miss Dorothy A. Sayer, chief operator, an assistant chief operator, and two supervisors enjoy these comfortable quarters.

The local switchboard is a three-section Western Electric No. 1 M type board equipped with 1,200 answering jacks and 1,200 multiple jacks, with an ultimate capacity in each section of 4,900 multiple jacks. The toll board is standard No. 1 Low type, of two sections of two positions each, equipped for sixty toll lines.

Middletown

In any city in which the telephone has reached a particularly complete development, it is safe to assume that progressive industry is a factor of importance. It may perhaps be a question whether the telephone is of greater value in business or at the time of great emergency. In *intensity* of value the emergency may indeed claim the laurels, but emergency is the exception, not the rule, and it is in the everyday affairs of business that the value of the telephone bulks largest.

The telephone development does in truth bespeak an active business life in Middletown. Three railroads connect the city with New York—the Erie, the New York; Ontario & Western, and the New York, Susquehanna & Western. The great car shops of the N. Y. O. & W., employing about a million dollars' worth of labor; the Howell-Hinchman leather works, with 200 employees (the factory which hasn't closed since 1865, except on holidays and a week annually for necessary repairs); the Borden's Condensed Milk plant; and the foundries, machine shops, silk mill, and other factories combine to build up a very active industrial life in Middletown.

Telephone Service

The imagination may paint an impressive picture of the rôle of the telephone as a factor in this industrial activity, but the facts far outstrip any product of fancy's pencil. In one of the factories where the wheels and belts play their perpetual burring accompaniment to the day's work, a great machine may pause with a shriek in its thundering career, grate harshly and stop. The great worker has met with disaster. The contracts to be filled that day remain but partially complete. The raw material piles up, but no eager steel fingers pluck it from its platform to drive it between a score of wheels and through a hundred complicated mechanisms to come forth a finished product. The firm has a great name to maintain; shall the contracts be broken? Shall the breakdown of one great machine tie up the plant, and the consequent obstruction to business be laid at the door of this well-known firm? Not for an instant. The man in charge of the great machine steps to the telephone, and the engineer is at hand almost before the receiver is replaced; the office of the firm is informed and a hundred messages are sent. The trouble proves to be of peculiar complexity; in a moment experts are called from New York. The wires to every part of the great plant, to every local agency that can help meet the multitudinous requirements of the situation, to every distant place with which communication is needed, are vibrant with the calm ordering of a hundred details. There is no uneasiness, no undue excitement. The delay is handled with assurance, for

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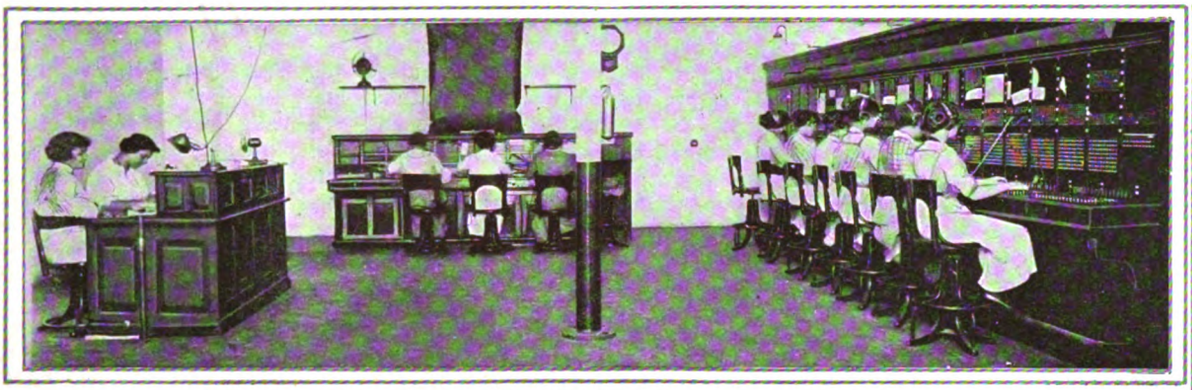
Orange County Telephone Company

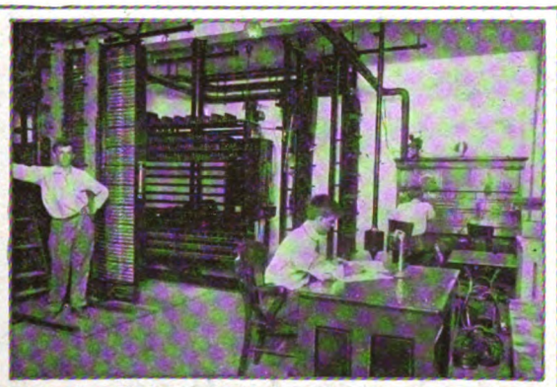
Plant Superintendent's Office
John Ayers, District Plant Manager (Left)

President Edwin Fancher (Left)
Vice-President Frank D. Fancher, (Right)

The Commercial Office, Miss Agnes V. Rowell
Commercial Manager (Extreme Right)

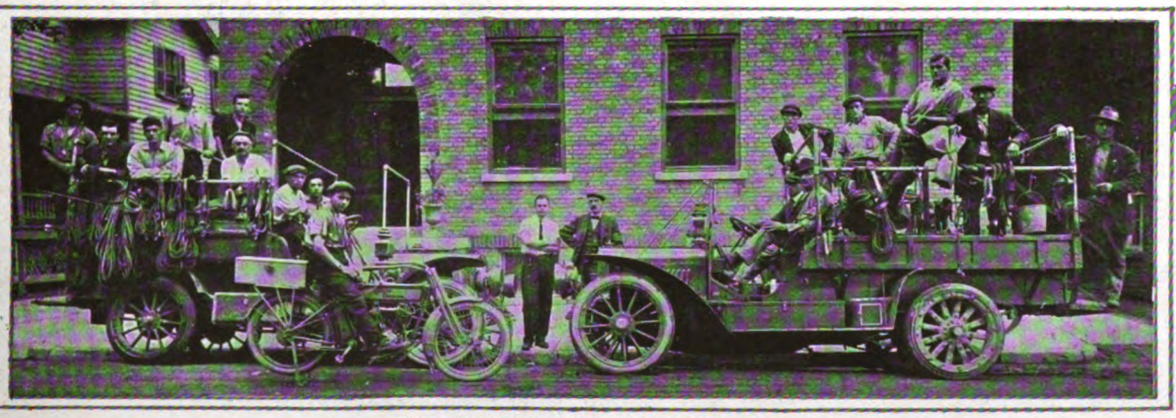


The Operating Room



Wire Chief's Desk, Test Board, and Terminal Room

Laying Underground Conduit Under Erie Crossing



"Gangs" in Front of the Company's Building

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with every facility for local or distant communication, every contingency can be provided for. Soon the great machine slowly and quietly lifts its giant arms and with a long hum settles into its accustomed rhythm.

In a similar manner the telephone is every day unobtrusively doing its indispensable best for the business enterprises of Middletown. Whether it is in handling the loads of steel and other supplies in the car shops, or bringing in touch the plant of the Condensed Milk works with the farms of the surrounding country, or transacting the financial, commercial, and social affairs of the section, the Orange County Telephone Company is furthering in a multitude of ways the business life of the active little city and its neighboring communities.

Rural Lines

Wide stretches of rolling farm land surround Middletown, and each year are becoming increasingly popular as the summer haunts of city-dwellers seeking pure air and quiet recreation. The rural telephone is hardly less important than the service in the city itself, for farmers are using the telephone more and more every day for social purposes, and to sell their produce, to arrange for shipping, and for the purchase of machinery and supplies. Between the use of the telephone by the farmers and by the summer residents whose connection with distant cities makes necessary frequent use of the long distance lines, the rural telephone service of the Orange County Telephone Company is growing rapidly.

State Hospital

On the outskirts of the city is the Middletown State Homeopathic Hospital for the Insane, where patients from Orange, Sullivan, Ulster, and Rockland Counties are treated. People from other parts of the State are received here also if they especially desire homeopathic treatment. The hospital was opened in the spring of 1874 and since that time has treated over eight thousand patients. The grounds afford ample facilities for outdoor treatment and recreation, over three hundred acres being the property of the hospital. A large part of this is devoted to farming, but a most attractive setting for the large main buildings is afforded by the sweeping, close-cropped lawns whose gentle slopes are adorned by exquisite white birches and stately elms. In all, the real and personal property of the hospital exceeds $2,000,000 in value. A training school for nurses and attendants is conducted in connection with the hospital and has proved most successful.

In conducting the administrative affairs of this large institution of Statewide importance, in transacting the many details of everyday business of the hospital and the farm, and in the care of patients, the summoning of physicians, etc., the telephone figures prominently and increases the efficiency of the institution to an almost incalculable degree.

Thus is the Orange County Telephone Company actively furthering the diverse interests of a growing section, and the provision made by the Company for further growth in plant and equipment augurs well for the future.

Facts That Speak

BUSINESS had been wretched for some time with a New Jersey florist—so poor, in fact, that he really contemplated offering the place for sale for whatever it would bring. He had canvassed for trade in the old-style way of circularizing by mail, but the results were far from encouraging.

The nearest telephone to him was located in an ordinary saloon, and if an occasional order came over the wire, some of the profits had to be parted with at once to "treat" the person who acted as messenger for the call. His family frequently urged the necessity of a telephone and often suggested it as a means to increase the business, but he could not be convinced. He was finally persuaded last May to "just try it out, anyway."

The results were astonishing from the very beginning. Orders came in so fast that in the short period of two months, May and June, he made enough money to more than pay for the telephone for the next two years to come. He has been enabled, also, to build two new hothouses, and a third is under way. It seems like a fairy tale to him, the sudden rise from depression of the worst kind to prosperity and a bright future, all due to the installation of a telephone!

O. A. ALBRECHTSON,
Plant Dept., 24 Walker St., N. Y.

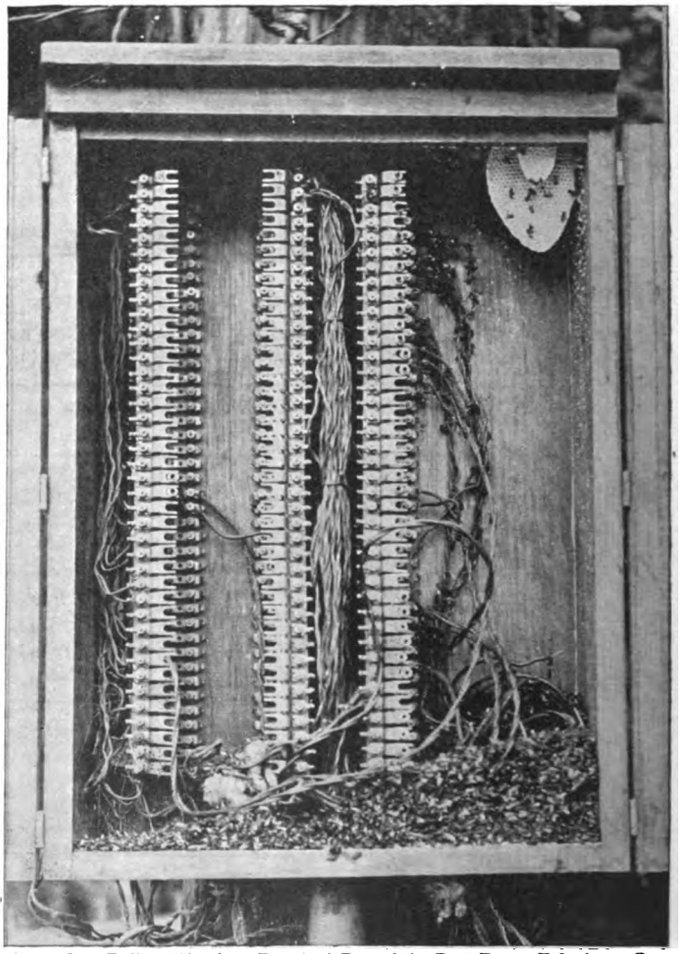
Sparring for Time

"Say, you! I advertised for a strong boy."
"Well, ain't I a strong boy?"
"You don't show it. Why, you make a four-round contest out of licking a stamp."—*Louisville Courier-Journal.*

"Poisonous Gas"

IF C. W. Weston, manager of the Port Byron Telephone Company, had been in the honey business he might have welcomed the visit of a full sized swarm of bees which took refuge in the Company's terminal box located on the main street of the village. After taking council with the local physician and druggist, and receiving no satisfactory advice, Mr. Weston's mind wandered back to the old days on the farm where on one occasion he had been compelled to test conclusions with several skunks. He procured some bi-sulphate of carbon and with it saturated a handful of cotton waste and packed it in every aperture of the terminal box. A careful and cautious examination was made the next evening, when it was found the deadly fumes had done their work. The accompanying cut shows the dead bees. Note the comb started in the top right hand corner.

M. C. TETLEY,
Local Commercial Manager, Auburn, N.Y.



Busy Bees Built a Hive in a Terminal Box of the Port Byron Telephone Co.

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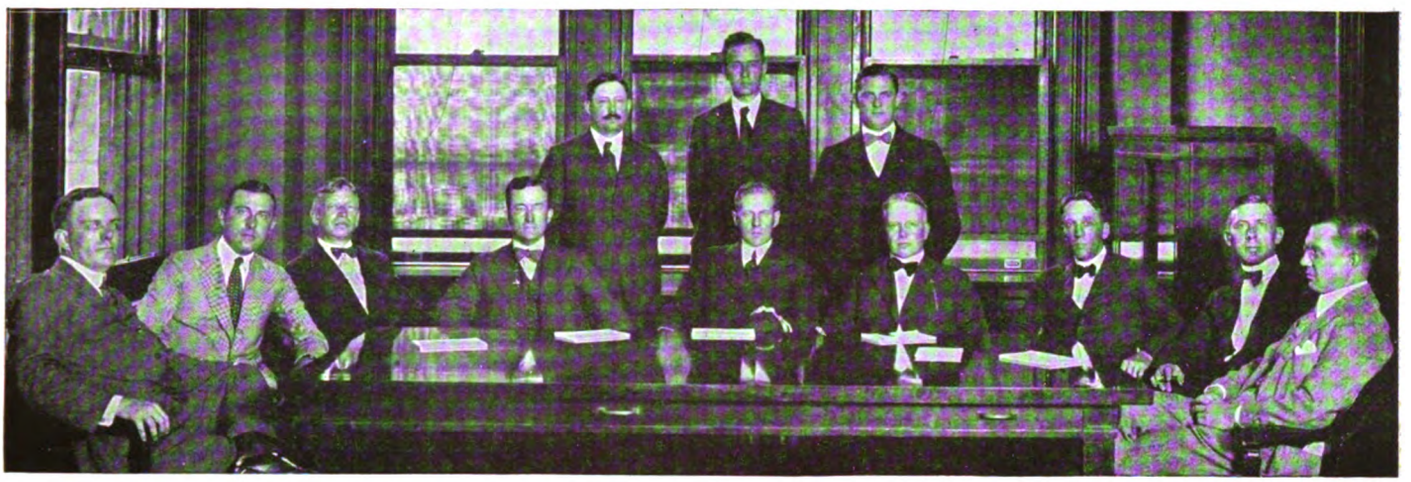
The Telephone Society of New York



EXECUTIVE COMMITTEE, MAIN SOCIETY

Left to right—seated: 1. R. Gordon, W. E. Co., 2. E. B. Craft, W. E. Co., 3. A. C. Thomas, N. Y. T. Co., 4. R. H. Boggs, N. Y. T. Co., Vice-President, 5. I. J. Thorp, N. Y. T. Co., President, 6. J. D. Newman, N. Y. T. Co., Secretary-Treasurer, 7. F. E. Congdon, N. Y. T. Co., 8. M. H. Orth, N. Y. T. Co., 9. F. L. Devereux, A. T. & T. Co. Standing: 1. A. W. Deas, N. Y. T. Co., 2. O. B. Blackwell, A. T. & T. Co., 3. H. W. Casler, N. Y. T. Co.

ON October 3, 1896, twenty employees of the New York Telephone Company and the American Telephone and Telegraph Company met at 153 Cedar street, New York, and effected a temporary organization which on the 17th of the same month was formally constituted The Telephone Society of New York.

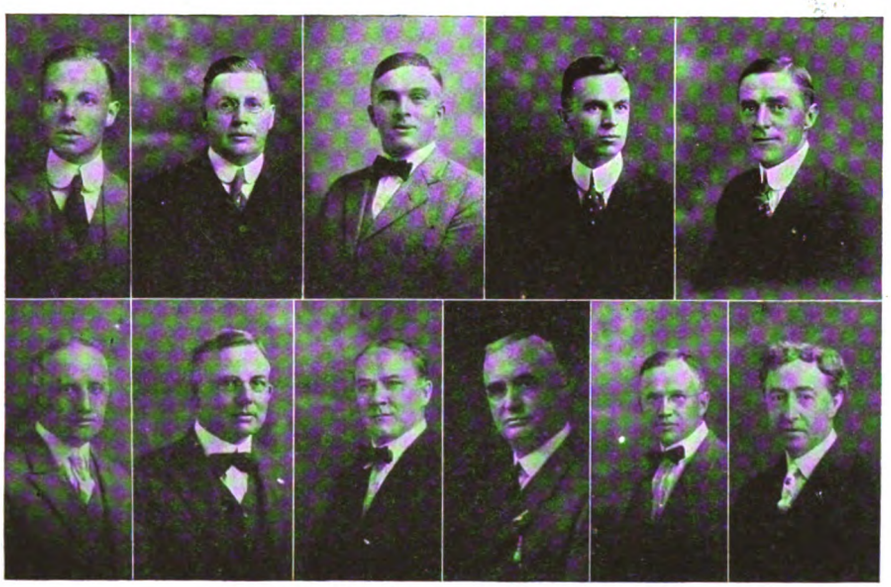
On October 10, 1916, which is equidistant between the 3d and 17th, but exactly twenty years later than the October first mentioned, the same Telephone Society of New York, with a membership of over 4,300, representing a growth of more than 21,600 per cent., will celebrate its twentieth birthday.

Almost any private office is large enough to accommodate as many as were present at the first meetings, but the entire drill floor of the 71st Regiment Armory will be taxed to its utmost capacity to hold the membership that will flock to the meeting this month.

Mr. J. S. McCulloh was one of the three men, and is the only one now a member, who first proposed such a society and took steps to organize it, and Mr. A. A. Marsters was the temporary secretary appointed at the first meeting, and is the only one of the early officers of the society now a member.

To them and their then fellow-members who are still on the roster of the society the growth and importance of the organization must be a matter of deep pride and interest.

During these years the stated object of the society has not changed, but, like many another—or at least one other precious document, its interpretation has often been determined by expediency.



EXECUTIVE COMMITTEE, HUDSON SECTION

Left to right: Upper—1. C. E. White, Chairman, Albany, 2. H. R. Rupley, Secretary-Treasurer, Albany, 3. V. R. Folmsbee, Glen Tel. Co., Johnstown, 4. S. B. Mooers, Albany, 5. J. E. Drum, Poughkeepsie. Lower—1. F. C. Hagey, Albany, 2. E. W. Bigler, Newburgh, 3. J. W. Kennedy, A. T. & T. Co., Lansingburg, 4. F. M. Cozzens, Schenectady, 5. F. L. Arland, Albany, 6. J. C. Fagan, Albany.

To illustrate: The constitution of the society has always read:

> The object of this Society shall be the study of matters pertaining to the telephone business, by means of their presentation and discussion by the members and others in meetings.

Accordingly, academic, theoretical, and practical papers have been read and more or less intelligently discussed on different occasions, dealing with the question of "Why a *Cross* Arm?" or endeavoring to elucidate Mr. Casson's thesis upon what would happen if a tear drop fell on an open wire carrying a message of love over a party line from a rustic swain to his inamorata, with a sub-title explaining that said tear drop flowed from the liquid eyes of a disappointed maid who yearned for the affections of the fickle youth; Engineers have given the scientific reasons why a loading pot is like the widow's cruse of oil, and differs from the lamps of the foolish virgins; Commercial men have given formulæ for securing contracts when some of the audience preferred the hunch method; Plant men "orated" upon how to make the cost of a job agree with the estimate, and Traffic would devote an evening to urging the coöperation of the other departments in convincing a doubting public that such a thing was possible as a "busy line."

Distinguished officials of the Companies and others delivered valuable papers upon important phases or developments of the business and kindred subjects, and the

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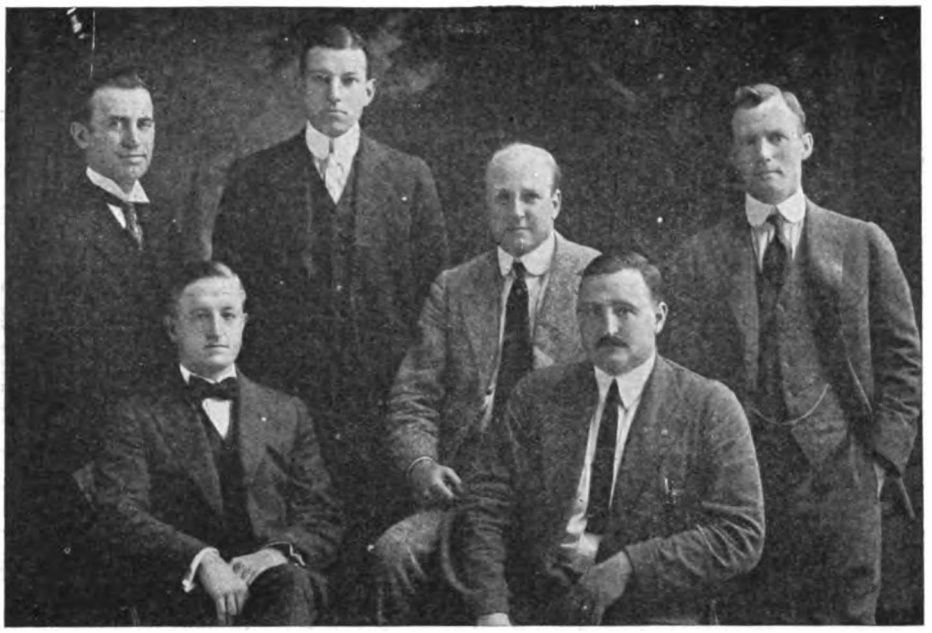

EXECUTIVE COMMITTEE, CENTRAL SECTION
Left to right—1. J. P. Bernard, 2. E. M. Gladden, Chairman, 3. L. A. Wilcox, 4. F. J. Chesterman, Vice-Chairman, 5. A. M. Cartter, Secretary-Treasurer, 6. D. J. O'Brien.

society was in various ways performing the serious and beneficial purpose for which it was organized.

But the increasing size and highly specialized character of the organization made it correspondingly difficult to select any speaker or subject that would attract all of the members to any such meeting.

The present executive committee accepted the challenge of the situation and undertook to solve it, with the result that it has departed from the custom of past years and planned meetings which will be both constitutional and of interest to every member of the society, regardless of his grade or department, as an employee of either of the three companies from which the membership of the society is drawn.

The change, however, is not so much in the interpretation as in the method.

IN the Hudson, Central, and Western Divisions of the New York Telephone Company section organizations have been formed affiliated with the Main Society in New York, and in numerous cities in those divisions district organizations have been formed affiliated with the section organizations. Only in Rochester, however, is there a formal chapter organization. Each organization will continue to follow methods most suitable in its own particular case, but it is possible that the social feature will be one of the predominating characteristics of all meetings both up-State and down-State hereafter.

IT has often enough been demonstrated that matters "pertaining to the telephone business" may be made so interesting that the study of them will be entertaining as well as instructive.

No better means than the Telephone Society could be devised for bringing together so many thousands of the employees of the companies who are so closely related in their work, and it should be the object and pride of the society and all its members to have an organization that is the biggest and best of its kind, not only in the telephone business, but in any commercial business in the world.

Beginning with the celebration of the Twentieth Anniversary of the Telephone Society of New York, in which the Main Society and all the Section and District Societies will jointly participate, may the next twenty years, and each of them, keep pace with their brilliant opportunities!

THIS celebration will begin promptly at 8 o'clock in each of the following cities: New York, Kingston, Newburgh, Glens Falls, Albany, Utica, Binghamton, Syracuse, Rochester, Buffalo, Jamestown.

At 8.15 o'clock they will be tied together by telephone, talk with each other, and conduct a formal and official business program for a few minutes.

The speakers will be Mr. F. H. Bethell, Mr. J. S. McCulloh, Mr. A. A. Marsters, in New York; Mr. James H. Manning in Albany; Mr. D. C. Cox in Syracuse, and Mr. T. T. Ramsdell in Buffalo.

The up-State sections will then have a Transcontinental demonstration.

The Main Society will have a demonstration by Engineers of the A. T. & T. Co. and Western Electric Co. of some startling things that can be done by means of electricity and some uses that are made of it in telephony.

Nothing like these demonstrations has ever been done before anywhere in the world, and after the program is concluded an opportunity will be given members of the Society to inspect some of the apparatus.

Members should arrive early and find their seats promptly as the seating accommodations are limited to 4,000.

ROCHESTER CHAPTER
Left to right—B. F. Gibson, J. J. Menneiley, Chairman, Frank E. Lawn, Secretary.

EXECUTIVE COMMITTEE, WESTERN SECTION
Left to right—1. C. W. Little, N. Y. T. Co., 2. (Lower) C. H. Thomas, N. Y. T. Co., Vice-Chairman, 3. (Upper) F. C. Saunders, Allegany County Tel. Co., 4. A. R. Roberts, N. Y. T. Co., 5. A. F. Neal, N. Y. T. Co., Chairman, 6. H. I. Dobson, N. Y. T. Co., 7. (Upper) J. W. Tabb, N. Y. T. Co., 8. (Lower) P. W. Helffenstein, N. Y. T. Co., Secretary-Treasurer, 9. J. Lillich, N. Y. T. Co.

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Private Line Telephone System for Police Department in Morristown

By A. A. Vescelius, Local Commercial Manager

NOT that Morristown is such a wicked place, for it is not, but because it has the practice of doing things the efficient way—that is why Morristown now has a private line telephone police box system that equals the best.

When a town comes to the point where every piece of its fire apparatus is mounted on an automobile chassis, it naturally wants to bring its police department to the same point of efficiency, and this Morristown has done.

The 40-Line Switchboard Where the Private Lines of the Police System Terminate. The Mounting of the Time Stamp and Register Is Shown at the Right

With the system as it was prior to the inauguration of the telephone police boxes there was no effective way of keeping in touch with the patrolmen or of their reporting to headquarters, except as their round of duty brought them in. Inasmuch as each man must now report from a signal box at prescribed periods, approximately every half hour, it is easy to see that his failure to do so would indicate to the sergeant at the desk that perhaps he had met with foul play or for other reasons could not reach the box, or at least something was wrong.

A Shady Road in the Suburbs Looking Toward Town. Police Signal Box on Pole

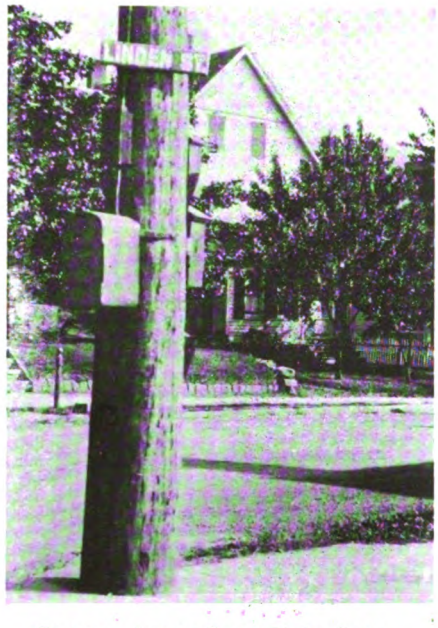
A Police Telephone in Use

In case a report of a crime or a complaint is received at the headquarters it can be given to the patrolmen as they report from the police boxes for their particular beats.

The idea of adopting the most efficient system of police communication was accepted by the Board of Aldermen after receiving the report of Chief Engineer Frank E. Pierson. The Board thoroughly discussed the matter, and a resolution was passed appropriating the necessary funds for the installation and maintenance of the system.

Mr. Pierson had been empowered to investigate the various telephone police box systems in use in other cities and as a result the best features of these systems were put into practice in Morristown.

On December 13, 1915, an approved contract with the New York Telephone Company was entered into in which the Telephone Company was to install a forty-line switchboard at the police headquarters on Speedwell avenue, Mor-



Evergreen Avenue, Corner Linden Street

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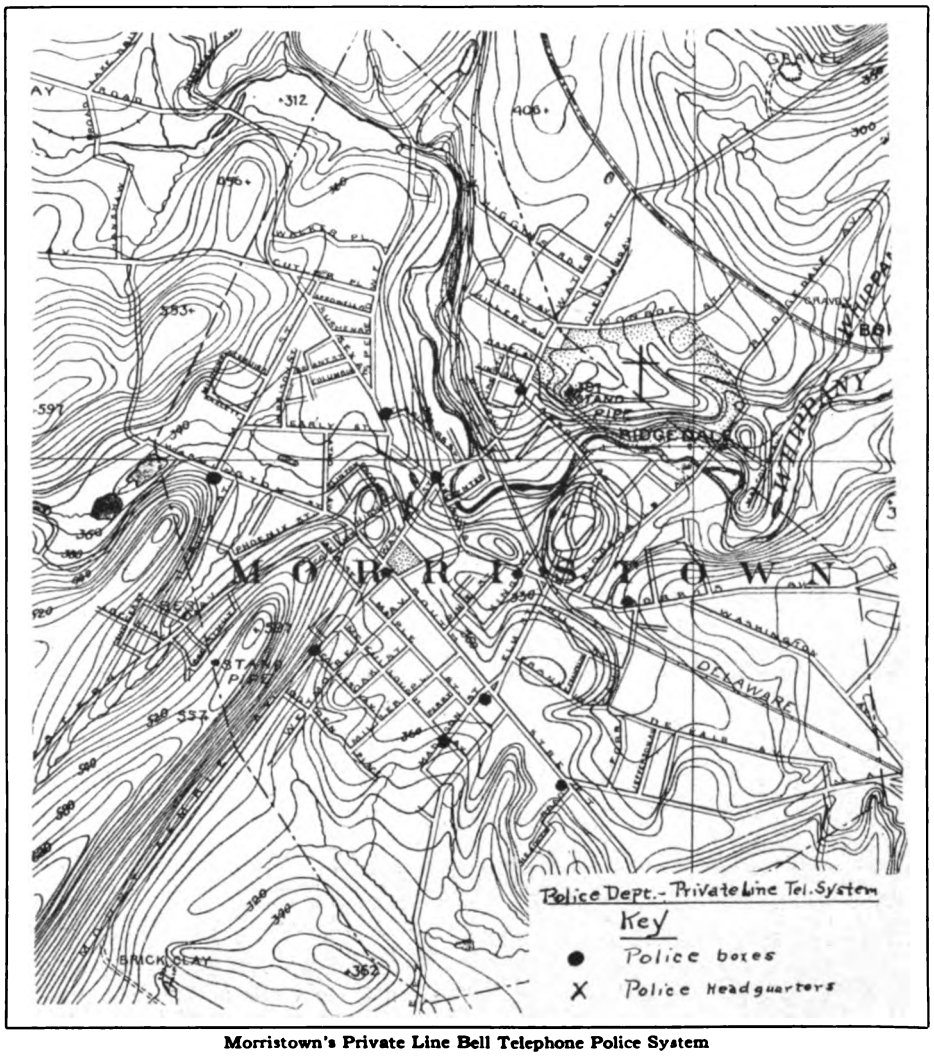


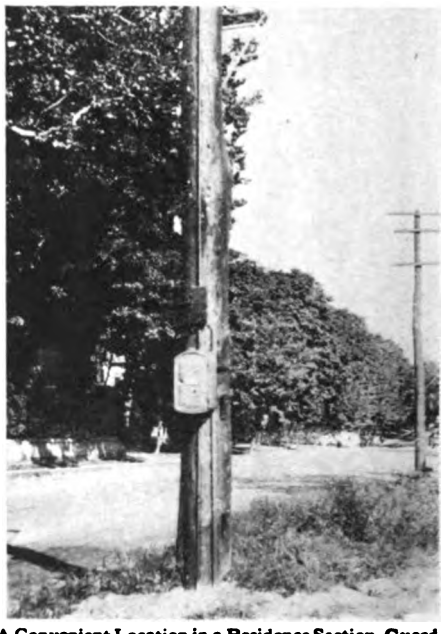
Morristown's Private Line Bell Telephone Police System

ristown, N. J. The Gamewell Fire Alarm Company's equipment was also installed, consisting of a two-pen automatic register with time stamp and clock.

Five private lines were run by the Telephone Company to connect with the switchboard the instruments in the twelve police boxes throughout the city.

Each box is painted blue on the outside and bears the number of the box in large numerals, together with the wording, "Telephone System—Police Dept." The boxes are equipped with a black enamel set and transmitting key lever in the outer compartment and each member of the force carries a key to this compartment. In an inner compartment of the box is housed the mechanical movement to operate the punch register and time stamp at the police headquarters, it being necessary only for the patrolman to give the transmitting key lever in the outer compartment a half turn and let go. The lever in returning to its normal position operates the mechanical movement in the box and immediately there appears on the paper tape at headquarters the date and the hour, preceded by punches to indicate the number of the box. For instance, if a patrolman on September 9, 1916, reported at 8.20 A.M. from Box No. 31, the tape would appear like this: "- - - - '16 9 9 A 8:20." By means of a take-up reel, this tape is rewound and the rolls kept for future reference.

The system has been in use only a few weeks, but it has already proved its value, and Chief of Police John Morrison testifies warmly to the satisfaction that has been given from the first by this most efficient telephone system.



A Convenient Location in a Residence Section, Guarding the Peace

Conveniently Located Opposite the Lackawanna Station

Just a Few of the Officers Comprising the Morristown Police Force, at Headquarters

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So long as there is work to do there will be interruptions—breaks in its progress—and it is a part of one's character growth to bear these timely or untimely interruptions without any break in good temper or courtesy.

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Perfect Attendance

BUFFALO CITY OPERATORS

First line—Misses Gladys Hamilton, Anna Sullivan, Helen Ott, Edna Phillips, Alicia Dunnigan, Barbara Schmitt, Frances Torpy, Mabel Zimmerman. Second Line—Misses Ethel Kopper, Dorothy Madigan, Grace Jones, Bernice Parsons, Ella McGovern, Kathryn Weisbecker, Teresa Pfeiffer, Mary Wagner. Third Line—Misses Marion Smyth, Cecelia Donovan, Beatrice Chappell, Minnie Shilk, Lillian Kirschman, Myrtle Rings, Edna Danner, Louise Hamp, Doris Parsons, Violet Schieb, Emma Klug. Fourth Line—Misses Ethel Cocker, Florence Mulderig, Alma Luebke, Clara Marschka, Leonoro Dingboom, Margaret McNamara.

ROCHESTER CITY OPERATORS

Back row left to right, Main Exchange—Misses Anna Becker, Mary Sloan, May Reynolds, Crescentia Rummel, Florence Jennings, Louisa Surridge. Front row, Toll, Misses Julia Collins, Eva Weidman, Jessie Durney.—Chase, Miss Mary Short.—Genesee, Misses Jessie Austin, Mary Robena.

THE Buffalo and Rochester City operators who appear in the accompanying pictures have not been absent from duty a single day for any reason during the past year. Such a record certainly shows their interest in their duties and their loyalty to the Company.

These operators have given many reasons for attaining this record, stating that due to having good health and taking proper care of it, pleasant working conditions, cheerful surroundings, and interesting work, they have been enabled to attend to their duties for a year without losing a single day.

A whole year without a day's absence is certainly an achievement for these girls, of which they should be proud. They are to be congratulated.

There are operators in all parts of our territory who have equally good records, and a great many who have not been absent for a day in three and in some instances even five years.

The Buffalo and Rochester operators shown in these pictures, therefore, are more or less typical.

Thomas Carlyle says of his father, "He was one of those few men that could believe and know as well as inquire and be of opinion." It is by such men that the progress of the world has been secured, not by your hesitating tremblers, afraid to say *they know* because there may be some hidden particle of error in their belief.—*W. Garrett Horder.*

Success in life is not so much a matter of talent or opportunity as of concentration and perseverance.

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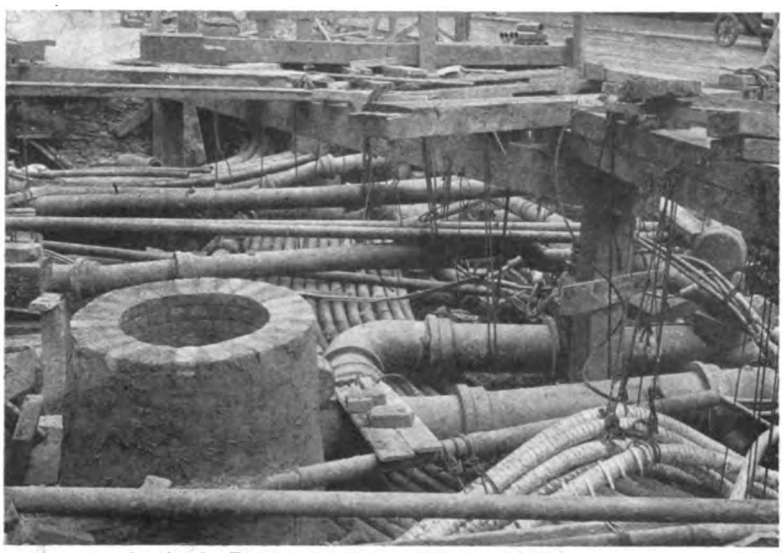
Telephone Subway Reconstruction Due to Rapid Transit Subway Construction



1. At the Bottom of All This Lies the Telephone Subway

THE accompanying illustrations from photographs taken on the east side of Broadway, at the intersection of Twenty-seventh street, are among the most interesting ever obtained on the rapid transit work. They show a portion of a 48-duct telephone subway built under extremely difficult conditions. A few words in explanation of the work undertaken at this point will aid in an understanding and appreciation of the pictures.

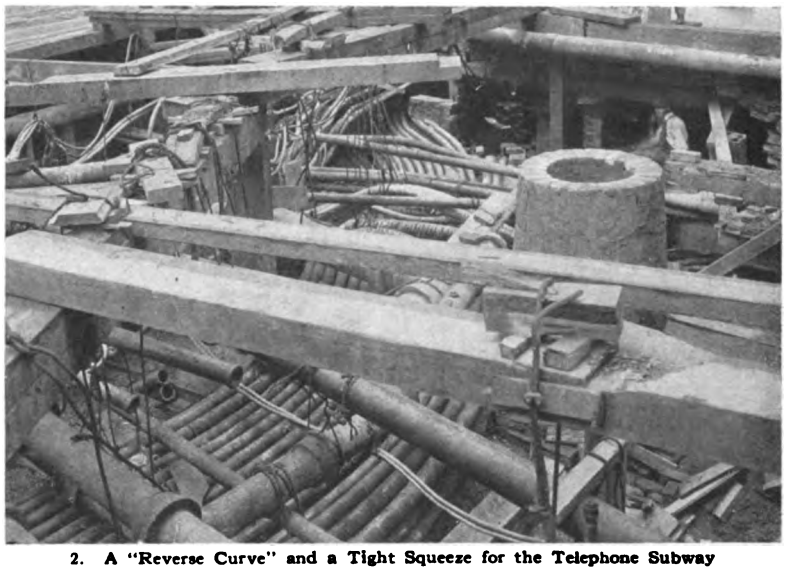
This work embraced the restoration of a 26-duct telephone subway on the east side of Broadway, the restoration and enlargement of a manhole appertaining to this line, and the construction of a new 48-duct telephone subway and a manhole, also on the east side of the street.

The new manhole is located 14 feet south of the south curb line of Twenty-seventh street, and is half in the street and half under the sidewalk. The 48-duct line is carried north out of the manhole in two banks of 24 ducts each, 4 wide and 6 high. It swings down and to the right, after leaving the manhole, changing in formation to a solid bank 16 wide and 3 high. This change was necessary in order to pass under various gas and water mains and two high-tension duct lines.

Fig. 1 is a view looking south from the northeast corner. In the left foreground may be seen the chimney of a sewer manhole, and beyond it, gas mains suspended from timbers over the excavation. The two large mains in the foreground are 12-inch water mains, and in front of these may be seen high tension cables, also temporarily "hung up," as it were.

In a lowly position underneath all these pipes appears the 48-duct telephone subway, resting on top of the roof of the rapid transit tunnel. The wrought iron pipes forming this subway, it should be understood, are protected by an envelope of cement grout (mortar mixed very thin so it will flow easily) before backfilling is commenced.

Fig. 2 was taken looking north and shows plainly the long sweeping reverse curve in the subway line. In the background directly behind the sewer manhole, and under the sidewalk at the northeast corner, is a Consolidated Telegraph & Electrical Subway Company's manhole. In the left background may be seen a tangle of cables, which are those in the existing 26-duct telephone subway. They were exposed, at the time this photograph was taken, through the demolition of the manhole housing them. This manhole was enlarged when rebuilt, and this picture shows clearly the tight squeeze in getting our subway between the sewer manhole, the C. T. & E. S. manhole, and our existing manhole, and, at the same time, underneath the various gas and water mains. It was necessary, at this intersection, to make changes in two 4-inch gas mains, three 6-inch gas mains, and one 12-inch water main, in order to accomplish the above result.



2. A "Reverse Curve" and a Tight Squeeze for the Telephone Subway

Fig. 3 gives a close view of the telephone subway looking west from the northeast corner. At the extreme right, supported by a chain, may be seen the ends of the pipes forming the 26-duct line, with the cables issuing from them. The reconstructed manhole was built around these cables. This photograph tells better than words of the conditions

3. Three Different Formations in a Distance of Less Than 75 Feet

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under which this and similar work must be performed. The 48-duct telephone subway is shown, at the right, curving out and around the C. T. & E. S. manhole. Beyond this point the duct formation was again changed to 6 wide by 8 high, thus showing three different formations in a distance of less than 75 feet.

Praise from "The Ad-Visor"

THE Ad-Visor is a department recently inaugurated in the New York *Tribune*. In the September 14 issue of that esteemed newspaper the following appeared in the Ad-Visor column. It is gratifying to see the increasing consideration which is being given to the service so generally used that familiarity with it has tended to obscure its virtues. Such appreciation as is contained in the subjoined article both stimulates and encourages the best that is in us.

"Don't you think that a word of praise should be given to the New York Telephone Company for its courteous service and efficiency?

"I have had frequent occasion to notice the courtesy and cheerfulness of the telephone operators in answering calls, and the fine control they exercised over their temper when an irate, unreasonable, and weak-minded subscriber, or public telephone user, lost his. Few people actually realize what telephone efficiency means to the business and social world. Can you imagine what would happen if the telephone should be put out of service for one day? When a foreigner visits New York he is amazed at the efficiency of the telephone service, the courtesy shown, etc., because he is in a position to weigh the telephone system in his country and ours.

"With the abuse of words that the New York telephone operators are subject to, during the day, and the service they give notwithstanding, I have often thought that it would indeed be quite a pleasure on my part to have the opportunity to meet the genius (for I believe that it really takes a genius) who is at the head of that wonderful organization, the New York Telephone Company, the man who really directs the entire force under command, and has made his personality felt through the thousands of employees, high and low.

"I have come in contact with a number of other departments of the Telephone Company, and have found the same courteous spirit, and the desire to please, to be their main object, which attitude is in strong contrast with the treatment a few of *The Tribune* readers received from the large express companies.

"I am of the opinion that if more commendation were given to organizations of the above caliber for their service to the public it would serve to separate the sheep of efficiency service from the goats of inefficiency, if I may use your expression. M. G. C."

The other night we were working alone in an office where the 'phones are operated through a switchboard. We don't know how to run a switchboard. And until someone came in who did know how we couldn't do anything but think of people to whom we would like to telephone! That is the way it is with the telephone. We all take it too much for granted. We need a person like M. G. C. to rise up occasionally and tell us how good it is. And, speaking of how good it is, a lawyer of wide experience tells The Ad-Visor that this same company is the most scrupulous of all the public service corporations he knows, in its dealings with the owners of abutting real estate along roads on which it runs its wires and poles, in not seeking any unfair or surreptitious advantage.

Theodore N. Vail, Farmer, Visits New York State Fair

MR. THEODORE N. VAIL, agriculturist, Lyndonville, Vt., was one of the most interested visitors at the New York State Fair at Syracuse on September 11.

It was no assumed or unnatural role that Mr. Vail undertook for he is not only a practical, dyed-in-the-wool farmer for his own diversion, but with the interest of the farmer generally at heart he conducts at Lyndonville a school of agriculture for young men and an academy for young women, "to make good farmers of the boys and good farmers' wives of the girls," he explained. Mr. Vail's observation is that the boy might as well remain on the farm, for no matter where a great man is the world will find him out.

Mr. Vail at the State Fair in Syracuse, Accompanied by Mr. D. C. Cox

At the invitation of Mr. Thomas K. Smith, District Governor of the Rotary Club and Chairman of the Committee on Invitations, Mr. Vail arrived in Syracuse in time for the opening of the Fair, the attendance at which exceeded all previous openings by more than 300 per cent.

Mr. Vail thoroughly enjoyed every minute of his stay at the Fair. Under the guidance of Mr. D. C. Cox, Division General Manager, he visited many of the exhibits and displayed his practical knowledge of agricultural matters by his pointed comments. A herd of brown Swiss cattle particularly interested him.

In the afternoon Mr. Vail was present at a reception and luncheon given at the Fair Grounds by the State Fair Association in honor of the Republican Presidential Candidate, the Hon. Charles Evans Hughes. Accompanied by Mr. William Nottingham, member of the New York State Board of Regents, Mr. Vail also motored to the Syracuse University where he met Chancellor Day and discussed with him educational matters in general and the work being done at Lyndonville Institute and Lyndonville School of Agriculture in particular.

In the evening Mr. Vail was a guest at the Sac-Bust'r's banquet at the Onondaga Hotel.

In his trip to Syracuse Mr. Vail did not overlook the opportunity of visiting the telephone building, where he was most cordially received.

Pioneers Change Dates

THE date of the convention of the Telephone Pioneers of America has been changed from October 19 to 20, to Friday and Saturday, October 27 and 28.

The headquarters have also been changed from Georgian Terrace Hotel to the Hotel Piedmont, Atlanta, Ga. Owing to alterations, it will be impossible to use the Georgian Terrace Hotel as headquarters, as first contemplated, but those who have made arrangements with the Georgian Terrace for accommodations may continue them, as the hotel will be used for housing some of the guests.

The change of date makes it necessary to revise the itinerary for the special Telephone Pioneers' train, which will leave New York on October 25. Final details will be announced in due course by Mr. Starrett, the secretary, to all members of the Telephone Pioneers.

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Demonstrating Preparedness

A TELEPHONE exhibit was arranged at the Monmouth County Fair, held at Red Bank during the period August 31 to September 4, inclusive.

The display, which was purely educational in character, was built around the idea that the Bell System is prepared to do its part in time of war as well as peace. This thought was brought out by an illuminated map showing the Transcontinental Telephone Line and other principal trunk lines of the American Telephone and Telegraph Company, together with placard reproductions of the A. T. & T. Co. advertisements, viz., The Agency of a United People; Neighborizing the Farmer; We Are Prepared; One Nation—One People; The Telephone Unites the Nation; Weavers of Speech. Other specially prepared placards used were—We Are Prepared; The Telephone Lines of the Bell System Reach All Parts of the Country; The Entire Bell System is at the Disposal of the United States Government in Time of National Need; and The 160,000 Employees of the Bell System Form the Biggest and Most Effective Signal Corps in the World.

Not the least interesting part of the exhibit were two field telephones, two combination buzzers and telephones, a hand reel with buzzer wire, and several photographs which were loaned to us for this display by the Recruiting Publicity Bureau of the United States Marine Corps.

The display was housed in a booth decorated with blue and white. The front of the booth was in white and was so cut out that the blue background gave the appearance of two huge blue bells. Seats were provided for the use of our visitors and a placard was displayed inviting the public to come in and rest.

It is estimated that there were 20,000 people in attendance at the Fair and most of these visited our booth, which was located in the main exhibition tent.

Public telephone facilities were furnished by two coin-boxes in booths and this fact was advertised by the display of a number of placards about the grounds, indicating the location of the stations. In this connection a small placard was displayed reading, "If You Are Expecting a Telephone Call, Leave Word Here and We Will Page You."

The decoration of the booth was planned and executed by Local Commercial Manager W. H. Hall and his assistant, Mr. A. O. Taylor, of Long Branch, and as will be seen from the illustration, their work resulted in a most effective display.

New York Telephone Company's Exhibit at the Monmouth County Fair, Red Bank, N. J.

The Telephone Club

THE Telephone Club announces its reopening for the season 1916 1917. The Grill Room is open every day at 5.30 P.M., Saturdays at 1 P.M.

Dinner parties should make reservations with Mr. Pierce, the Manager, not later than 3 P.M.

The committees on entertainment, golf, bowling, billiards, checkers, cards, gymnasium, and other activities are announcing their schedules.

Reservations for departmental "Nights" should be made at once with the Secretary.

Fishing Party

THE Cablemen of the Manhattan Division, out for fish and a good time, left Ulmer Park Sunday, September 10, on the fishing boat *Avalon*. Three prizes were offered—one for the first edible fish caught; second, for the largest fish; third, for the smallest fish. The first fish caught was a young "shark," or dogfish, and it took the Committee and everyone aboard to convince the captor, Mr. P. Ryan, that he was not entitled to the first prize, since the shark is not an edible fish, but Mr. Ryan could not see it that way and said: "Begorra, I'll ate it myself!" Mr. Simonson won the prize for the largest fish, and Mr. Nicholson won the prize for the smallest, Mr. Johnson taking the honors from Mr. Ryan for catching the first really edible fish. Mr. Dorwin was unable to join the party, but furnished corncob pipes and tobacco. On account of a rough sea, not all the men caught fish, but everyone had a good time, so much so that they plan another trip soon, or they will challenge the Splicers or Wiremen to a fishing contest for a prize.

The man who insists upon seeing with perfect clearness before he decides never decides.

A Group of Cable Men "Goin' a-Fishin'."

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Efficient Buffalo Service

ON September 5, 6, and 7 Mr. Benj. M. Schulein, secretary-treasurer of the Royal Roofing Co. of Pittsburgh and St. Louis, conducted a telephone sales campaign from Buffalo, and in this campaign covered practically all the towns in New York State within a radius of about 50 miles from Buffalo and some towns as far away as 70 miles. During these three days Mr. Schulein made 224 calls between 9 A.M. and 6 P.M., the average conversation being 4.7 minutes per call, the longest call being 12 minutes.

Mr. Schulein used an office in the Telephone Building at Buffalo and during the time of his campaign Miss Sadie Marks, a toll supervisor, was assigned to record and complete all calls to points reached over the toll lines of the New York Telephone Company. The tickets to points reached over A. T. & T. lines were handled by the A. T. & T. Co.'s regular operators.

Mr. Schulein first gave Miss Marks a list of 143 firms in various towns who dealt in his product. The calls were recorded on regular toll tickets by Miss Marks and the directory work was then taken care of in the regular routine.

Under date of September 11, Mr. Schulein wrote the following letter from his headquarters:

September 11, 1916.

Mr. J. J. Welch, Div. Superintendent of Traffic, New York Telephone Company, Buffalo, N.Y.

DEAR SIR: As you no doubt are aware I was in your office three days last week using the long distance telephone, particularly your toll line.

I wish to take this opportunity of expressing my appreciation of the excellent service received. I may safely say I have never received better telephone service any place in the United States than was accorded me by your Company, in fact Miss Marks who handled my calls worked most diligently and efficiently and I have no doubt it was due to her efforts as well as to the cöoperation of your Chief Operator (Miss Collins) that my trip proved most successful.

Most cordially yours,
BENJ. M. SCHULEIN, *Secretary.*

Practice What You Preach

THE Atlantic Terra Cotta Company publishes a bulletin for its employees and an entire page in a recent issue is devoted to calling attention to the proper method of telephoning. Experience justifies us in saying that some of our fellow-employees need to take this lesson to heart. The page is reproduced for their benefit:—

"TELEPHONE

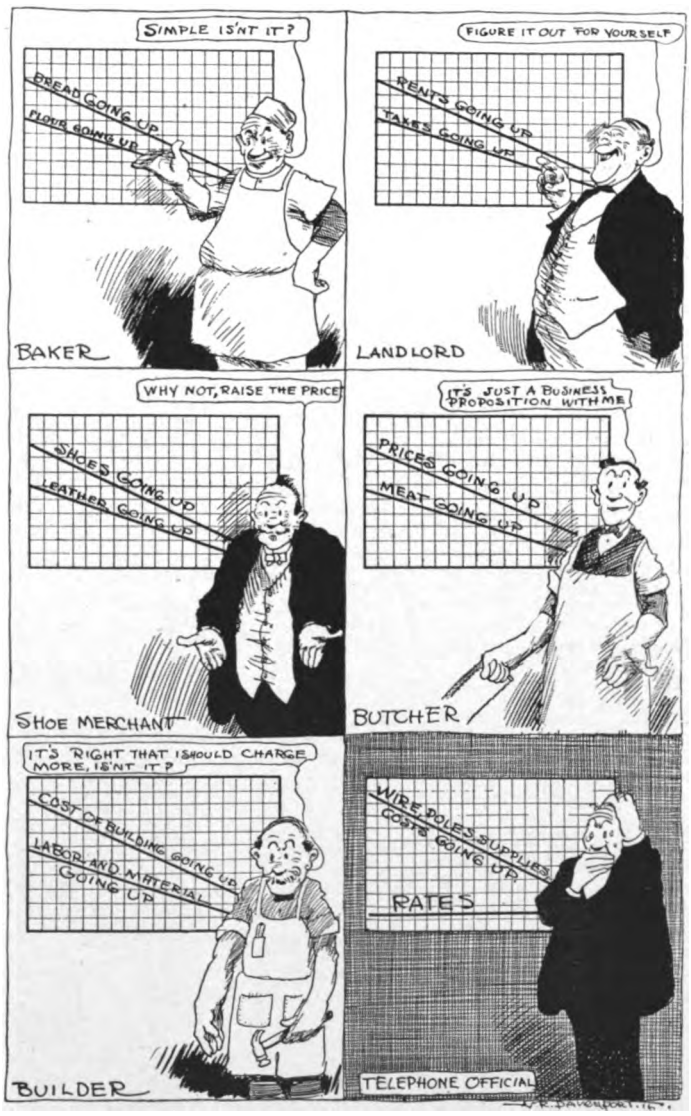
"In talking over the
telephone
face the transmitter
a few inches from the mouthpiece
and
speak clearly and distinctly.

"We have observed that very few of our employees, when using the telephone, show proper consideration to the person at the other end of the wire as the majority fail to follow these simple rules. Some people get two feet away from the transmitter and direct their voice at right angles to it and then expect the listener to hear distinctly. Please be careful about this little thing."

The Perfect Day

WHEN you've started the day with a bunch of pep
And a zest for the old ham and—;
When you've swung to work with a springy step
As the tasks of the day you planned;
When you've pitched right in and raised merry hob
With the work that you found to do.
With a brain so clear that the meanest job
Was easy as pie for you—
Then the feeling you have as you hit the hay
Is a feeling of great content,
And *that* is the end of a perfect day,
Of a day that has been well spent.

From Baers' Facts.



Think It Over
From *The Pacific Telephone Magazine*

"Somewhere East of Rochester"

ONE Sunday evening in August, a Gypsy calling from a public telephone at Rochester placed the following problem before the toll operator, viz., to reach any member of his band which was "somewhere east of Rochester," the only suggestion being, that they might possibly be at Lyons.

The call was passed on to Lyons and it was found that no Gypsy band had been seen in that vicinity. The call was not abandoned, however, as the calling party stated that the band must be found regardless of cost and time, as a death message was involved.

The Supervisor set to work immediately, calling Clyde, Newark, Oswego, Camillus, Marcellus, Palmyra, Wolcott, Victor, Elbridge, and Auburn, towns covering any area the band could possibly have traveled through in the time since the Gypsy had left them. The first sign of encouragement was met at Auburn where the information was received that a Gypsy band was encamped some miles outside the city.

After a few moments of explanation to the Auburn operator, it was found that the messenger service office would motor to the camp and bring back any one of the members for the sum of $5. This arrangement was satisfactory to the patient Gypsy, who was more than grateful when his party reached a telephone to take his message.

While the time and effort expended in completing this call were nowhere near paid for by the forty-five cents toll charges finally collected, this is but another example, in a slightly unusual setting, of the universality of the telephone. For the nameless Gypsy, the least and most casual of customers, the toll operator took as much pains and personal interest in getting whom he wanted as she would for the best of regular subscribers.

(MISS) A. GALLAGHER, *Supervisor, Rochester Toll.*

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(Form 116, 117, 118, 119.)

(Form 120.)

The Telephone Company of New York,

No. 32 TRIBUNE BUILDING.

P. O. Box 5529.

MILBORNE L. ROOSEVELT, CHARLES A. CHEEVER, Managers

NEW YORK.

First Page

(Form 119.)

Fourth Page

(Form 117.)

The Bell Telephone.

FOR CHEAP AND INSTANTANEOUS COMMUNICATION BY DIRECT SOUND.

THE SPEAKING TELEPHONE of Prof. ALEX. GRAHAM BELL has now attained such simplicity and cheapness as to render it universally available for public, private, social, or business communication.

It needs no battery, has no moving machinery, and no skill is required—ONLY TALK AS IN ORDINARY CONVERSATION, and listen attentively.

It conveys the *quality* of the voice so that the person speaking can be recognized at the other end of the line. It enables the manufacturer to talk with his factory superintendent, the main office with the branch office, the home with the store or office, the physician with his patients, the country residence with the stables or any part of the grounds, the mouth of the mine with its remotest workings, or in fact, any given point with any other point, although many miles apart.

A set of Telephones consist of a pair at each end of the line, and are rented at $40 per year.

Bell Calls are furnished, if desired, at a yearly rental of $5 each.

The proprietors keep the instruments in repair without charge, unless injured through carelessness, and there is no expense in working them.

We will furnish estimates for the construction of lines. Application should state the length of wire needed for the line, character of the route over which it would be carried, etc.

Lines already up, in most cases, can be used without change.

Patent rights have been granted for the Bell Telephone in the United States and foreign countries, and no infringement will be allowed.

The Telephone is now in practical use on many lines in New York, Boston, Philadelphia, and elsewhere.

Information given and Telephones leased by

The Telephone Company of New York,

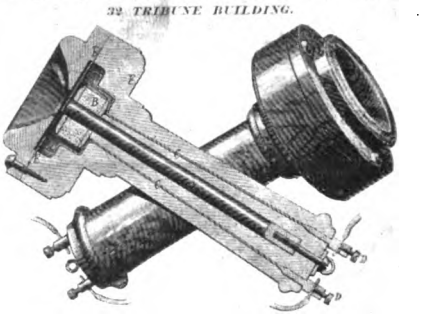
P. O. Box 5529. *32 TRIBUNE BUILDING.*

Second Page

(Form 118.)

The Telephone Company of New York,

32 TRIBUNE BUILDING.



PROFESSOR A. GRAHAM BELL'S TELEPHONE has [illegible] been simplified in construction. It consists now of but three metal portions, and is contained in a casing of wood or light hard rubber, but five and five-eighths inches in length and two and seven-eighths inches in diameter at the enlarged end. This Telephone differs from all others, as it involves the use of no battery.

The simplicity of the construction is clearly shown in the above engraving, in which both sectional and exterior views of the device are given. Referring to the sectional view, A is a permanent magnet, held by the screw shown in the rear. Around one end of this magnet is wound a coil, B, of fine insulated copper wire (silk covered), the ends of which are attached to the larger wires, C, which extend to the rear and terminate in the binding screws, D. In front of the pole and coil, B, is a soft iron disk, E. Finally the whole is inclosed in a wooden casing having an aperture in front of the disk, and which, besides serving to protect the magnet, etc., acts somewhat as a resonator.

The principle of the apparatus may be summarized as follows. The influence of the magnet induces all around it a magnetic field, and the iron diaphragm, E, is attracted towards the pole. Any alteration in the normal condition of the diaphragm produces an alteration in the magnetic field, by strengthening or weakening it, and any such alteration of the magnetic field causes the induction of a current of electricity in the coil, B. The varying strength of the induced current is dependent upon the rapidity of the vibration of the disk, and this depends upon the air disturbance made by the voice in speaking. Therefore, first, a wave of air throws the diaphragm into vibration; second, each movement produces a change in the magnetic field; and third, an induced current is generated in the coil wires. Now if to the binding screws wires be attached, communicating in like manner with an apparatus similar to that described, it is clear that an induced current will pass through the second Telephone, thereby modifying the strength of its magnet thus increasing or diminishing its attraction for the diaphragm. Hence every vibration made by the first disk is repeated by the second, and whatever sound produces the vibration of one is transmitted to and reproduced by the other.

Third Page

FOUR-PAGE CIRCULAR (8½ INS x 11 INS.) ISSUED BY THE TELEPHONE COMPANY OF NEW YORK IN 1877

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The TREND of REGULATION

By R. V. Marye, General Attorney

Shipper and Carrier Cannot Fix Rates by Contract

THE Court of Appeals of Georgia, in the case of Wright *vs.* Pelham and H. Railroad Co., held, on May 30, 1916, that shippers and common carriers cannot, by contract between themselves, fix the rates to be charged on shipments of freight. That the Railroad Commission has exclusive power to make rates and to determine what are just and reasonable rates. That a contract between a shipper and a common carrier fixing any rate other than that established by the Commission, is, therefore, illegal and unenforceable.

Rates Fixed by Franchise May Be Changed by Commission

THE Supreme Judicial Court of Massachusetts held, in Board of Survey of Arlington *vs.* Bay State Street Railway Co., on June 22, 1916, that the Public Service Commission had authority to determine the reasonable rates to be charged by a street railway company and that it could not be prevented from taking such action in that regard as it might deem proper by any agreement of a common carrier entered into by reason of any requirement of any municipal board, and that, therefore, said Commission had power to approve the action of a street railway company in raising its rates of fare above the maximum fixed in the franchise granted to it by the Selectmen of the Town of Arlington.

The Court states further, that in granting franchises for street railways Boards of Selectmen and Boards of Aldermen are not the agents of their respective municipalities but are public officers through whom, as instruments, the State exerts its sovereign power, and that, therefore, whatever conditions the State may have imposed in the original franchise with regard to fares was waived by the enactment of the statute authorizing the Public Service Commission to fix the rates of public utilities.

Overtime on Local Messages

THE Public Service Commission of New York, Second District, in dismissing the complaint of Mark H. Ellison *vs.* The New York Telephone Company as to the charge made by said Company for over five minutes' use of the telephone by subscribers who contract for a certain number of calls, stated that it had sufficient technical knowledge of telephone operation in general, and of measured rate service in particular, to fully appreciate the great burden and cost involved in the timing of every one of the millions of local messages handled annually in New York City under the measured service system. That the necessity for a definite unit or measure for measured rate, service is too nearly axiomatic to need discussion. That the possible minor discrepancies that may arise through inaccuracy in the Telephone Company's present method of observing and charging for overtime calls, cannot, in the present development of the telephone business, be held to be of sufficient consequence to constitute illegal discrimination or to warrant the issuance of an order requiring the accurate timing of each and every local message.

Deposits for Security

J. B. SWOVELAND complained to the Public Service Commission of Pennsylvania that the People's Natural Gas Company had refused to supply him with gas unless he made a deposit as security for the payment of his bills.

The Commission held, on June 30, 1916, that the Gas Company was justified in requiring a deposit from consumers whose financial responsibility was not known to it and in waiving the requirement of such deposit from those who were known and whose credit was established.

Rural Subscribers Not Entitled to Service at Urban Rates

F. V. BLACK, who had constructed a pole line from his farm, about a mile and a half outside of the Borough of Garrett, to the Borough limits, and who had been receiving electric current from the Utility operating in said Borough at 6 cents per kilowatt, complained to the Public Service Commission of Pennsylvania that the Garrett Electric Light, Heat & Power Company, which had purchased the system of said Utility, had increased his rate to 10 cents per kilowatt, which was the published tariff rate of said Company for domestic consumers of current.

The Commission held that the Company was justified in charging the increased rate, despite the fact that Black had constructed his own pole line. That if Black, who lived in a rural region, wants a costly urban facility, he must pay for it. That as a matter of fact he should not only pay whatever anyone living in the Borough of Garrett would pay, but he should also pay any additional expense involved in rendering service to him outside of the Borough, and that, therefore, he cannot complain at being asked to pay the rate established within the Borough.

Regulated Monopoly Preferable to Competition

THE Public Utilities Commission of Illinois, on June 6, 1916, in approving the purchase of the telephone property of the Chicago Tunnel Company by the Chicago Telephone Company, said, among other things, that the constitutional and statutory inhibitions against monopolies were designed to preserve to the public such benefits as would accrue from competition, but that under the Public Utilities Law ample provision is made to more fully safeguard the interests of the public through a Commission authorized to supervise, regulate and control public service corporations in the matter of the reasonableness of their rates and the adequacy of their service, and to prevent discrimination in either rates or service. That formerly, without reasonable regulation and control, competition seemed to be the only method by which the public interests could be protected, but that with such comprehensive regulatory laws as are now in force, competition has lost its force as a corrective agency.

The Commission says further, that while the consolidation of the two systems will result in the formation of a corporation of great magnitude with immense power, which might, in the absence of reasonable governmental supervision and control exercise an evil influence on the Government or become oppressive to the public, these dangers cannot be regarded as a menace when the great power of the Government to regulate and control public utilities is properly exercised to prevent wrong and injustice.

The telephone business, says the Commission, is particularly and distinctly a public service of such a character that it requires local unification rather than competition. The operation of two systems in one locality necessarily fails in giving complete service, since the subscriber to either can only communicate with subscribers of the company of which he is a patron. Telephone service should be universal, not limited. Dual service restricts the use and increases the cost.

Commission May Authorize Increase in Rate Fixed by Statute

THE Ulster and Delaware Railroad Company applied to the Public Service Commission, Second District, New York, for authority to increase its rate for mileage books above the maximum rate of 2 cents fixed by the Railroad law of the State. The Commission, while admitting that the facts justified the proposed increase, refused to authorize the same, on the ground that it had no power to authorize a rate higher than that fixed by the Railroad law.

The Court of Appeals of New York, on May 2, 1916, affirmed the order of the Appellate Division of the Supreme Court, Third Department, which annulled said order of the Public Service Commission and which held that the Commission had the power to authorize the proposed increase, despite the provisions of said Railroad law.

A Telephone Company May String Wires Without the Consent of Local Authorities

THE Kings County Special Term of the Supreme Court of New York, in New York Telephone Company *vs.* Dittman *et al.*, decided on June 26, 1916, held, among other things, that since a telephone company receives directly from the State a franchise to use the public highways for aerial lines, it has the right to string wires along a highway without franchise or permission from the local authorities. That this right, however, is subject to the reasonable use of the streets by the public for travel and other purposes, and that the telephone company must, therefore, locate its poles so that they will not unnecessarily or unreasonably interfere with the use of highways by the traveling public.

A Through Rate for One Kind of Telephone Service May Exceed the Aggregate of Intermediate Rates for a Different Kind of Service

LOTT B. MALONE complained to the Interstate Commerce Commission that the New York Telephone Company and the American Telephone and Telegraph Company had overcharged him on certain calls between

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Flushing, N. Y., and Canaan, N. H. The calls in question were over the wires of the New York Company from Flushing to New York City, thence over the wires of The American Telephone and Telegraph Company to Greenfield, Mass., and thence over the wires of the New England Telephone and Telegraph Company to Canaan.

The charge complained of was 15 cents, the Company's regular charge for a "particular person" call from Flushing to New York for beyond plus the Company's regular charge for a "particular person" call from New York to Canaan. Complainant maintained that the charge from Flushing to Canaan should be but 5 cents greater than the charge from New York to Canaan since the charge for a "two-number" call from Flushing to New York was but 5 cents.

The Commission held that telephone calls may be classified, and that a through rate for one kind of service is not necessarily unreasonable merely because it exceeds an aggregate of intermediate rates for a different kind of service. That moreover toll service differs substantially from local service and is more costly to perform and that, therefore, it may reasonably be rated higher than local service.

The "Golden Calf" of Precedent

JUDGE SCOTT, of the Colorado Supreme Court, writing a dissenting opinion in the case of Van Kleeck vs. Ramer (May 1, 1916) protests vigorously against the tendency of the courts to slavishly follow precedent and says, inter alia:

"Precedents that find support in sound reason, and tend to promote justice, are strongly persuasive and generally to be followed; but precedents not so supported, or when for any cause the reason for the rule has ceased to exist, obstruct progress and should be discarded as being both unjust and dangerous. The tendency of courts to so generally rely on case law, regardless of existing reasons that may appeal for righteous judgment, is fast becoming a menace to our Government.

"I may be permitted to suggest, for the consideration of courts and judges who feel impelled to sacrifice their sense of reason and justice upon the altar of the Golden Calf of precedent, the quaint philosophy of Sam Walter Foss, in the following lines:

"One day through the primeval wood
A calf walked home, as good calves should;
But left a trail all bent askew,
A crooked trail, as all calves do.

"Since then, three hundred years have fled,
And, I infer, the calf is dead.
But still he left behind this trail,
And thereby hangs my moral tale.

"The trail was taken up next day
By a lone dog that passed that way;
And then a wise bell-wether sheep
Pursued the trail o'er vale and steep.

"And drew the flock behind him, too,
As good bell-wethers always do,
So from that day, o'er hill and glade,
Through those old woods a path was made.

"And many men wound in and out,
And bent and turned and dodged about,
And uttered words of righteous wrath,
Because 'twas such a crooked path;

"But still they followed—do not laugh—
The first migrations of that calf,
And through this winding woodway stalked
Because he wabbled when he walked.

"This forest path became a lane,
That bent and turned and turned again;
This crooked lane became a road,
Where many a poor horse, with his load,

"Toiled on, beneath the burning sun,
And traveled some three miles in one,
And thus a century and a half
They trod the footsteps of that calf.

"The years passed on with swiftness fleet,
The road became a village street,
And this, before men were aware,
A city's crowded thoroughfare.

"And soon the central street was this
Of a renowned metropolis.
And men two centuries and a half
Trod the footsteps of that calf.

"Each day a hundred thousand rout
Followed the zigzag calf about;
And o'er his crooked journey went
The traffic of a continent.

"A hundred thousand men were led
By one calf near three centuries dead,
They followed still his crooked way,
And lost one hundred years a day;

"For thus such reverence is lent
To well-established precedent.
A moral lesson this might teach,
Were I ordained and called to preach.

"For men are prone to go it blind
Along the calf-paths of the mind,
And toil away from sun to sun
To do what other men have done.

"They follow in the beaten track,
And out and in, and forth and back,
And still their devious course pursue
To keep the path that others do.

"But how the wise old wood-gods laugh,
Who saw the first primeval calf!
Ah! many things this tale might teach;
But I am not ordained to preach."

Public service commissions of the various States are now engaged in making a trail through the "primeval wood" of regulation of public utilities. Unlike the calf of which Mr. Foss writes they are, however, taking it all in all, blazing a straight and well defined trail. The task of the commissions has been an arduous one, as there were many treacherous morasses and apparently impenetrable jungles of divergent interests through which they had to carry the trail to the great plain beyond upon which there is room for both the public and the corporations which serve it to stand side by side, recognizing that each has rights which must be conserved and that "regulation" is the best and surest method of insuring the conservation of these rights.

First Aid Pointers

KEEP YOUR HEAD.

As fresh air is always necessary to promote the recovery of an injured person, others should never be permitted to crowd closely around. Only those actually engaged in treating the patient should be near him.

Place the head lower than the body in all cases where severe bleeding has occurred. In only two kinds of accidents should the patient's head be raised—when the head has been struck either by a severe fall or by some falling object, and the face is red or normal color, or when the patient is suffering from heat prostration or apoplexy, in both of which cases the face would be red and the pulse slow and strong.

If a person faints, what can YOU do to help?

KEEP YOUR HEAD.

Also, place the patient in a lying-down position with his head lower than his body. The cause of fainting is lack of blood in the brain and the object of treatment is to make the blood return to the head. Clothing, especially around the neck, should be loosened. Allow plenty of fresh air to reach the patient. Sprinkle cold water on face and chest Rub the limbs *toward* the body. If smelling salts can be obtained, or ammonia, place it near the nose. When consciousness has returned sufficiently to permit the patient to swallow, administer a stimulant.

If a person feels faint, actual fainting may be prevented by bringing the head forward and down between the knees. Unless this is effective at once, it should not be continued. Cold air and cold water will also do much to prevent fainting.

KEEP YOUR HEAD.
First, last and all the time,—
KEEP YOUR HEAD.

THE writer of the following article was recently making some tests on a trunk line in the Elizabeth district with the aid of one of the local troublemen, who was doing the heavy work (the writer was doing the "heavy looking on"). The trouble-man, while climbing one of the poles, started to take hold of a crossarm brace, but hesitated and was heard to repeat to himself, "Safety first," after which he changed his plan and took hold of the crossarm itself. He thus prevented a possible accident which might have occurred had the lag bolts holding the brace been broken or loose. This incident is cited as an example of a number of such incidents that have been observed lately, which indicates that the field forces are very rapidly making their personal safety one of the important factors in their daily work. This condition is very gratifying, and if continued and developed cannot but result in a decrease in the number of injuries to the employees, in the future.

From the New Jersey Plant Bulletin.

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NEW YORK TELEPHONE COMPANY

GENERAL OFFICES, 15 DEY ST., NEW YORK

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F. H. BETHELL, Vice-President
H. F. THURBER, Vice-President
FORD HUNTINGTON, Vice-President
WALTER BROWN, Secretary & Treasurer
J. L. SWAYZE, General Counsel
C. T. RUSSELL, General Solicitor
R. V. MARYE, General Attorney

J. A. STEWART, General Manager
J. S. WILEY, General Auditor
E. F. SHERWOOD, Chief Engineer
H. C. CARPENTER, Engineer
T. P. SYLVAN, Asst. to Vice-President
E. A. GURNEE, Asst. Treasurer
WALDRON HOPPINS, Asst. Secretary
J. S. KENNEDY, Asst. Secretary and Secretary Employees' Benefit Fund Committee.

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General Com'l Supt.

W. F. BAKER
Asst. to Gen'l Com'l Supt.

A. D. WELCH
General Com'l Engineer

R. S. SCARBURGH
Advertising Manager

J. LENIHAN
Manager Collection Bureau

Manhattan-Bronx & Westchester

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Division Com'l Manager
15 Dey Street

Long Island

H. W. DRAKE
Division Com'l Manager
81 Willoughby Street
Brooklyn

New Jersey

H. G. KERR
Division Com'l Manager
281 Washington Street
Newark

Hudson

J. A. JAMISON, Jr.
Division Gen'l Manager
158 State Street
Albany

Central

D. C. COX
Division Gen'l Manager
321 Montgomery Street
Syracuse

Western

C. A. SPAULDING
Division Com'l Manager
44 Church Street
Buffalo

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General Supt. Plant

A. W. ALLEN
Supt. Buildings & Supplies

J. C. RENNARD
Real Estate Manager

W. T. GURNEE
Plant Accountant

Manhattan-Bronx & Westchester

BURCH FORAKER
Division Plant Supt.
24 Walker Street

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P. D. HONEYMAN
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81 Willoughby Street
Brooklyn

New Jersey

I. J. THORP
Division Plant Supt.
281 Washington Street
Newark

Hudson

E. H. POWLEY
Division Plant Supt.
42 Howard Street
Albany

Central

F. J. CHESTERMAN
Division Plant Supt.
321 Montgomery Street
Syracuse

Western

P. O. JACOBS
Division Plant Supt.
44 Church Street
Buffalo

TRAFFIC DEPT.

J. H. GORDON, Jr.
General Supt. Traffic

R. H. BOGGS
Traffic Engineer

H. G. GREENE
Manager Public Telephones

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G. H. MERRILL
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Newark

Hudson

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Albany

Central

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Syracuse

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J. A. KENNEDY
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New Jersey

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Division Auditor Receipts
281 Washington Street
Newark

Hudson

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Division Auditor Receipts
158 State Street
Albany

Central

L. A. WILCOX
Division Auditor Receipts
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Syracuse

Western

H. W. GAUL
Division Auditor Receipts
44 Church Street
Buffalo

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> ****In my opinion nothing is so great a source of annoyance to telephone users, nothing results in so great a loss of temper and time, as the inconvenience of being called to the telephone and then having an office boy or the office telephone girl tell you to "hold the wire" until the calling party is ready to talk.**If there's waiting to be done it's the CALLING party's obligation to do it.****

This extract is typical of many letters we receive asking us to publish, from time to time, suggestions regarding the proper use of the telephone.

WOULD you call on a busy man at his office, send in your card, and then, when he had indicated that he could see you, ***keep him waiting*** while you finished reading an article in a magazine in his outer office?

When you finally came in, his welcome ***might*** not be as cordial as you would like—and you would be at fault.

It is just as important when you telephone that you ***be ready to talk when your party answers!***

It shows consideration for the other person's time. It makes for a more cordial welcome, and it gives ***you*** the advantage of having gained good will by your correct telephone usage.

A prompt and courteous greeting at the telephone helps to smooth the way for a successful conversation.

NEW YORK TELEPHONE COMPANY

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The TELEPHONE REVIEW

November, 1916 Vol. 7 No. 11

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Loyal to the Service

They Uphold Each Other's Hands

The public *must* be served. This is the dominating thought of the entire Bell organization from the president down. Every employe feels the sense of responsibility that this working principle implies. The public must be served—efficiently, uninterruptedly.

In the fulfilment of this policy, the management of the Bell System realizes that every individual employe must give undivided and undistracted effort and interest to his work.

To assure this, every worker receives adequate remuneration, ample protection in case of illness and provision for old age. All these personal matters are cared for so that the employe has the least possible worry regarding his own welfare. His whole-hearted attention can be devoted to serving the public.

While each employe realizes that he is but a single factor, he understands that not only is supreme personal effort expected of him, but also a loyal support to every other telephone worker.

There is something in the telephone organization which imbues every employe with a spirit of loyalty to the public. All feel a direct responsibility for each other because each recognizes that only by mutual endeavor can they render the high standard of service which is expected of them. They uphold each other's hands so that the public may be served.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

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The TELEPHONE REVIEW

New York November 1916

VOLUME 7 NUMBER 11

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

Published monthly by the New York Telephone Company. U. N. BETHELL, President; WALTER BROWN, Secretary and Treasurer. Publication Office and Principal Place of Business, 15 Dey Street, New York.

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VOL. VII. NOVEMBER, 1916 No. 11

Our Part and the World About Us

IT has often been said that nothing lies so close to the heart and life of the world as the telephone. The truth of this is seldom realized until some need or incident arises to bring it to mind. This fact establishes a bond of mutual respect and of obligation between the Company and its employees on the one hand, and the public they serve on the other. It makes every telephone employee and every telephone instrument an accessory in the affairs of every member of the public. The public looks to the telephone employees and telephone service as efficient and dependable adjuncts.

The intimate contact of the telephone is impersonal, but the employees who have dealings with the public see phases of life which reveal how close our business is to the whole of the great pulsing world of which we are a part.

To realize this is to give each of us a new view of our work and a new insight into our opportunities and responsibilities. The increased interest and variety afforded by a more general realization of this would act as an inspiration in the midst of the dullest job.

These thoughts are suggested by a letter recently received by the commercial office in Hempstead, L. I. It told of the gratitude and appreciation which a subscriber felt toward the Company. A man's wife lay ill. The frequent ringing of the telephone bell in her bedroom disturbed the quiet which she needed. At twenty minutes to two o'clock in the afternoon the husband requested that the telephone be moved and an extension without bells be installed in another room. At ten minutes to four the work was completed. That night the wife passed away.

We can imagine how the men went about their work in the room where the shadow of death was hovering; perhaps it would never occur to us that they would be noticed except as a necessary intrusion. But by their demeanor these installers impressed the household with their delicate courtesy as well as by the speed with which they performed their work, and in the midst of his sorrow the husband felt impelled to write us a letter expressing what he termed his deep obligation.

The same quality of service will always find the same response and produce the same inward satisfaction which these installers must have felt. To them it was perhaps but an incident in the day's work, but it showed how close the telephone comes to the hearts and lives of the public.

Twentieth Anniversary of The Telephone Society

THE Telephone Society of New York celebrated its Twentieth anniversary on October 10 at a meeting in which about 5,400 members, assembled in eleven cities, participated. Announcements of this event have been made for several months past and an account of the meeting appears on other pages in this issue.

Originating with Mr. J. S. McCulloh and two of his associates in New York twenty years ago, the idea has spread until there are nearly 25,000 male employees of the Bell System organized into societies which cover the whole country.

The Telephone Society of New York, composed of employees of the A. T. & T. Co., Western Electric Co., New York Telephone Co., and Associated Companies in the territory operated by the New York Telephone Co., begins its third decade with wider opportunities and greater responsibilities than it has known in the past. In the Main Society which meets in New York and the Sections and Chapters up-State, the increasing membership is one of the sure signs the organization is an important factor in the social and educational life of the men.

What's in a Name?

WHEN we printed in our issue of July the story of Audubon, the widespread interest which it created suggested that articles be printed from time to time explaining the selection of other exchange names.

This month we print a splendid article by Mr. Chas. R. Scott on "Bowling Green," the name recently chosen for one of the newest exchange districts in one of the most important sections in the present and future most important city in the world. From a historical standpoint this article is interesting and valuable, but it is no less so for the illustration it embodies of the great strides that have taken place in the means of communication which have had their birth and greatest development in this country.

It may be said without fear of successful contradiction that New York would be as small in importance as it is young in years compared with the great cities of the old world, if it were not for the extensive and efficient telephone facilities it enjoys and the use that is made of them, for it is significant that the greatest strides the city has made have been concurrent with its telephone development.

Other stories of exchange names are in preparation and will appear from time to time, each of which will be a further contribution both of local and general interest.

The preparation of these articles has brought into notice a minor department of a large organization which was unknown except to a few. It is the department which has charge of the work of studying and recommending names appropriate for new exchanges.

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There are a great many other small and unknown departments which are performing work of the greatest interest and importance, and an invitation is extended to them, also, to communicate with the editor of this magazine, who will be glad to assist them in the preparation of articles.

The great amount of study and research, investigation, inquiry and experiment, as well as routine and detail which go to make up the wonderful organization known as the New York Telephone Company, afford unlimited material for articles for this magazine, and their publication would be of the greatest interest and value to employees in every department.

The Folks at Home

YOUNG men and women in business will find, if they will talk over with their parents the work and problems which occupy their days, the same satisfaction that they had in going over their school books together. But how will the parents be able to talk intelligently with their children upon these business subjects? Parents should desire to be able to do so instead of feeling that, alas, their children have now gone out into the world to earn a living and only the home ties remain unbroken.

We suggest that our fellow-employees take THE TELEPHONE REVIEW home with them. We know of a great many who do this. One parent told us recently that his daughter, who works for the New York Telephone Company, brings home THE TELEPHONE REVIEW every month and that he and her mother read it from cover to cover with her. They are thus able, he said, to understand her business and talk it over with increasing interest and satisfaction both on her part and theirs.

Good-Fellowship Dinner

AN informal get-together dinner was held by the male employees of the Shore District of the New Jersey Division on September 28 at the Wheelmen's Club, Asbury Park. There were no speeches and just plain sociability reigned supreme. The telephone men had the entire use of the card room, billiard and pool tables and bowling alleys of the club. Great interest centered in an impromptu bowling match between representatives of the Commercial and Plant Departments.

The evening was so enjoyable that it is planned to have future dinners upon the same informal basis.

The World's Largest P. B. X.

THE contract has been signed between the New York Telephone Company and John McE. Bowman, representing the Hotel Commodore, for the installation of the largest private branch telephone system that has ever been constructed. The Commodore will occupy the block at Forty-second street, Lexington avenue, Forty-third street, and Depew place, and will be the largest hotel in the world.

The contract, which was negotiated by Mr. S. E. Lester, local commercial manager, Murray Hill, provides for a telephone system larger than that serving the 15,000 square miles of Greece, and fully as large as the telephone development of the average American city of 20,000 inhabitants.

A 26-position common battery switchboard, equipped to serve 2,400 extension stations, is to be installed, and approximately 1,000,000 local messages are contracted for. This means that the switchboard will handle about twice that number of calls, as it has been found from the experience of many years that on a hotel private branch exchange switchboard the interior and incoming calls equal the number of outgoing calls contracted for.

The main switchboard will be located in the pent-house on the roof of the hotel, where the light and air will be of the best. This board will serve the 2,000 guest rooms and the hotel organization only, for there will be four sub-switchboards to give service to the public telephone booths, of which there will be between 75 and 100 in the Forty-second street lobby and in the ballroom foyer.

It is estimated by the hotel manager that sixty operators will be required for night and day shifts, including one night and two day supervisors, and his intention of having one or two Spanish-speaking operators has been announced. The hotel will not be completed for a year and a half, but as the time for the operation of this largest private branch telephone system draws near, new features of unusual interest may be anticipated.

No Choice

MISS LYNCH, chief operator at Astoria, L. I., sends us the following conversation which is such a shining compliment from a subscriber to the operating force that it is too good to keep:

A SUBSCRIBER—Give me 789.

OPERATOR—Seven eight nine, what central, please?

SUBSCRIBER—Oh, any one will do, I'm not particular, those centrals are all nice.

The Art of Using the Telephone

THE *Grocers' Advocate*, a trade paper for that industry which is coming to depend so completely upon the telephone as successor to the customer's market basket, urges upon its readers the importance of using the telephone properly. This journal seems to realize that the day is gone when the telephone conversation was merely a method of transmitting information and that it has become an art in itself, to be developed as an avenue of business growth. The advice is good for every telephone user. This is the way the *Advocate* gives it:

When you answer the telephone treat the party on the other end with just as much politeness as you would if they were face to face with you. Many a store enemy has been made by the method of answering the telephone. Cultivate a telephone voice, a gracious, pleasant one, and let your customer hang up first. Nothing makes a woman madder than to be summarily cut off in an abrupt fashion. The telephone can be made of great service in making friends for the store, but it depends upon you whether friends or enemies are made.

Organization Changes

Manhattan-Bronx-Westchester

Commercial Department

Local Commercial Manager F. W. Hearne, transferred to take charge of the Plaza local office, reporting to the Harlem District Commercial Manager.

Local Commercial Manager F. A. Gillick will report to the Murray Hill District Commercial Manager for special assignment in connection with the coin box collection work.

Advertising Department

The following changes of title have been made effective:

W. F. Schmidt, from special agent to manager lecture bureau.

G. A. Leimbach, from agent to special agent.

H. J. Carroll, from agent to special agent.

A. V. Sedgwick, special agent, appointed chief clerk, Advertising Department, 15 Dey street, New York City.

H. A. Harrison, present chief clerk, will take up special study work in the Advertising Department, reporting to Mr. Sedgwick.

New Jersey Division

Plant Department

Patrick J. Ryan, formerly lineman, appointed line foreman, Newark district.

Harry J. Tracy, formerly lineman, appointed line foreman, Newark district.

Edward M. Kenny, formerly installer, appointed installers' foreman, Newark district.

Central Division

Plant Department

John J. Price appointed combination man at Moravia vice George Munn, resigned.

Department of Buildings and Supplies

W. Birmingham appointed supervisor of power plants.

J. M. Howley appointed engineer of the Telephone and Telegraph Building.

R. L. Wilkie appointed engineer of the Cortlandt-Dey Building.

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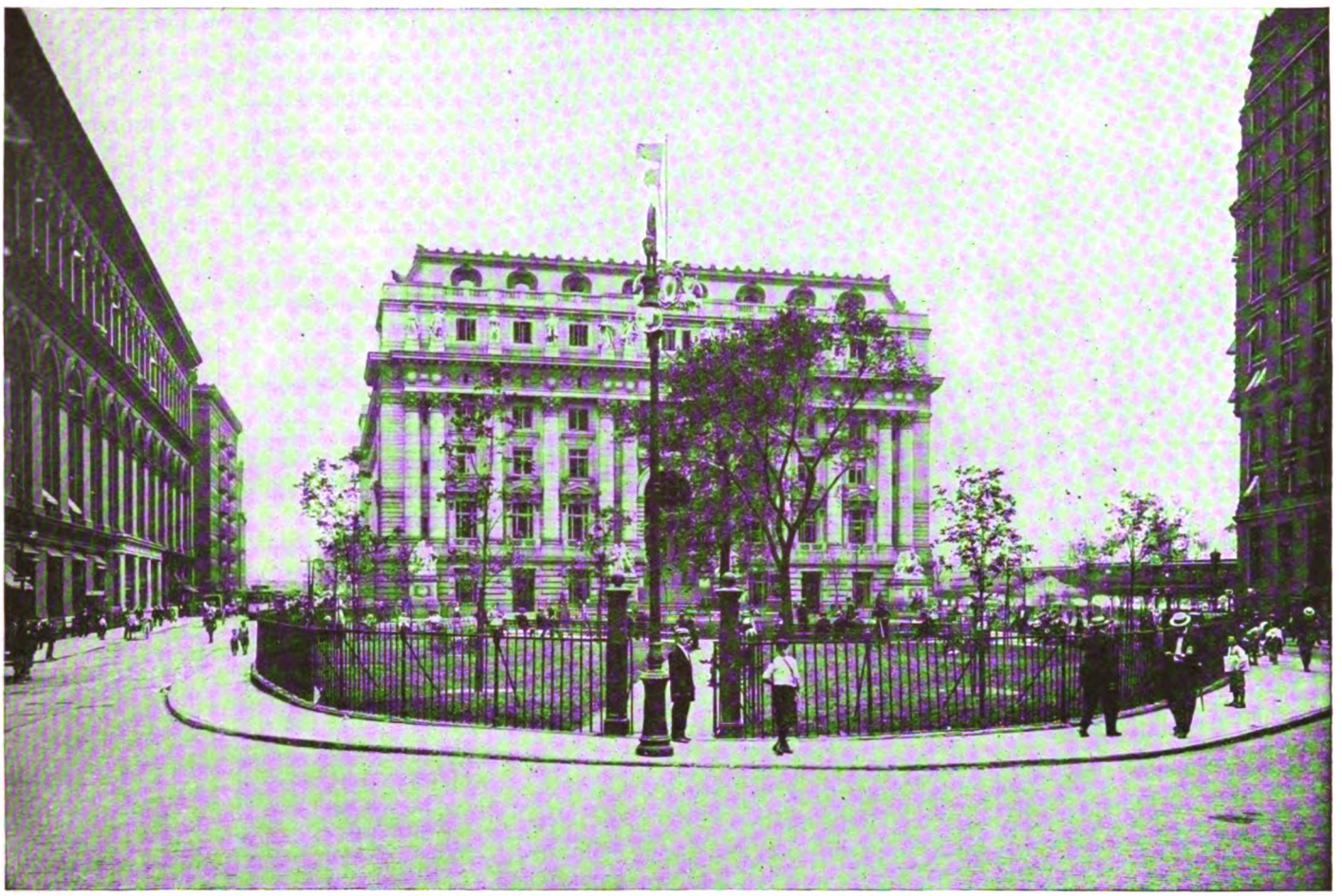

The Modern Bowling Green, With the Custom House in the Background

What's in a Name

"Bowling Green"

By Charles R. Scott, Traffic Engineer's Office

THIS department has completed a careful study of the areas involved, to determine a suitable central office designation for the Broad No. 2 district. Our study has covered all names of prominence associated with this district, either in the present day, or in the days of the old city of New York, and has included an extensive operating test of these names. In this study, two names stand out conspicuously as being associated with this district from the earliest days down to the present time. These names are "Bowling Green" and "Battery." . . .

In view of its historic interest in connection with this part of the city and because of its remarkably good showing in the operating test, it is recommended that Bowling Green be adopted as the name for the Broad No. 2 central office district.

SO reads the letter in which the Traffic Engineer recommended that the name "Bowling Green" become a part of the widespreading system of the New York Telephone Company, but the historic associations connected with the spot now known as "Bowling Green" run far back into the history of this country to the point where the mists of the unknown obscure it in the distance.

Out of these mists comes a vision of a dusky red man standing on a level spot near the southern end of the Island of Manna-hatta. As he gazes to the south through the trees, a signal plume of smoke appears above the hill in the distance across the Bay; to him it bears a message, but so vague that he must watch and wait until from the distant

FRONT VIEW OF BURNS'S COFFEE HOUSE
Broadway, opposite the Bowling Green, 1760
From an Old Print.

curtain of haze comes the form which has caused the message. Slowly the form grows in size and finally passes along the water to the west of the watcher, showing at the masthead the blue and white and orange banner so well known to the commercial world of the seventeenth century.

Another vision comes: In a circle, some standing, some sitting, are the figures of a crowd apparently bartering. On the one side are the lithe children of the forest clothed in the skins of the wild animals, and on the other, the sturdy Dutch burghers, offering the small gifts, so dear to the hearts of the savages, in return for the territory of such generous size. Small to the thrifty Dutchmen seems the value of the gifts, but indeed microscopic to them would be the few square inches of land which their twenty-four dollars would purchase on the same spot three centuries later.

The vision grows clearer and where in the year of our Lord 1916 will stand the stately Custom House, we see a rude

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Americans Pulling Down Statue of George III on Bowling Green After Signing of Declaration of Independence
From an old print

fort. A flag waves over it, and to protect the gate in front is an earthwork close to "The Plaine," which later is to become the Bowling Green.

Soon soldiers are seen parading on the open space in front of the earthwork. They disappear, and the space becomes filled with farmers offering for sale their cattle and the products of the soil, little dreaming that in the years to come the products of thousands, yes, tens of thousands, of farms will be bought and sold close by the place where they are now bargaining for a single bushel of wheat; little dreaming that the price of the products will be regulated, not by the supply and demand on the Island of Manna-hatta, but by the supply and demand wafted as it were on the wings of thought from the most distant parts of the globe.

Children scamper across the open space and in the long summer evenings the men smoke and play the game of bowls upon the smooth green turf, while the women join in friendly gossip. All the life of the village revolves around the Green.

Clearer and clearer grows the vision as the village grows to a city. Farther and farther extends the city, until the country residences and farms of the then-city-dwellers may be found far north of the Bouwerie village. Then ships bearing an ensign of a different color from that floating over the fort sail into the bay, and across the market-place come soldiers in different uniform,

Megarey's Rare Print of Broadway from the Bowling Green, 1828, as It Appeared in Valentine's Manual, 1854

and in 1664 the rule of the sturdy Dutch burghers gives way for a short time to the rule of the Anglo-Saxon, with the standard of Great Britain floating over the fort. A few years more, and for a brief period the Dutch flag again floats south of the market-place; but this does not last long, and the British banner again takes its place on the staff to await replacement by the flag of a newer nation.

The mists disappear and in March, 1733, the picture appears sharp and clear, as the Common Council formally establishes the Bowling Green in the following words:

Resolved, that this Corporation will lease a piece of land lying at the lower end of Broadway, fronting to the Fort, to some of the inhabitants of the said Broadway, in order to be inclosed to make a Bowling Green thereof, with walks therein, for the beauty and ornamentation of said street, as well as for the recreation and delight of the inhabitants of the city, leaving the Street on each side thereof 50 feet in breadth.

Munificent, indeed, is the rent of the Bowling Green as provided at this time; it is leased "at the yearly rate of one pepper Corne."

Governors come and go, but the Bowling Green remains the center of the civic life. Friction between the Colonies and the Mother Country

Bowling Green 1830. From an Old Engraving

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develops. The Stamp Act is passed and great excitement pervades the whole of the Colonies, but concerted action is greatly impeded by the poor facilities for communication. A letter from Boston to New York will be delivered under good circumstances in a week, the answer in perhaps the same time. Quicker communication is by messenger and is for the rich alone.

Slow communication does not, however, deter from action the independent city of New York. The merchants agree that importation of goods from England shall be stopped, and the resentment of the inhabitants finds further outlet through inflammatory handbills and threatening placards. On the day when the Stamp Act goes into effect, November 1, 1765, the "Liberty Boys," bent on making an emphatic protest, meet in Burns's Coffee House fronting on the Bowling Green. The meeting is soon over and to what is now City Hall Park goes the crowd, then to Fort George, just south of the Bowling Green, and with them they take two effigies, one to represent Governor Colden, and the other the devil, and present them before the gate of Fort George. Cool heads prevail within the Fort and this alone prevents a clash between the excited citizens and the soldiers. Then the Governor's coach house is broken open and the Bowling Green becomes the scene of an enormous bonfire in which the coach, the wooden fence which encloses the Green, and the two effigies disappear.

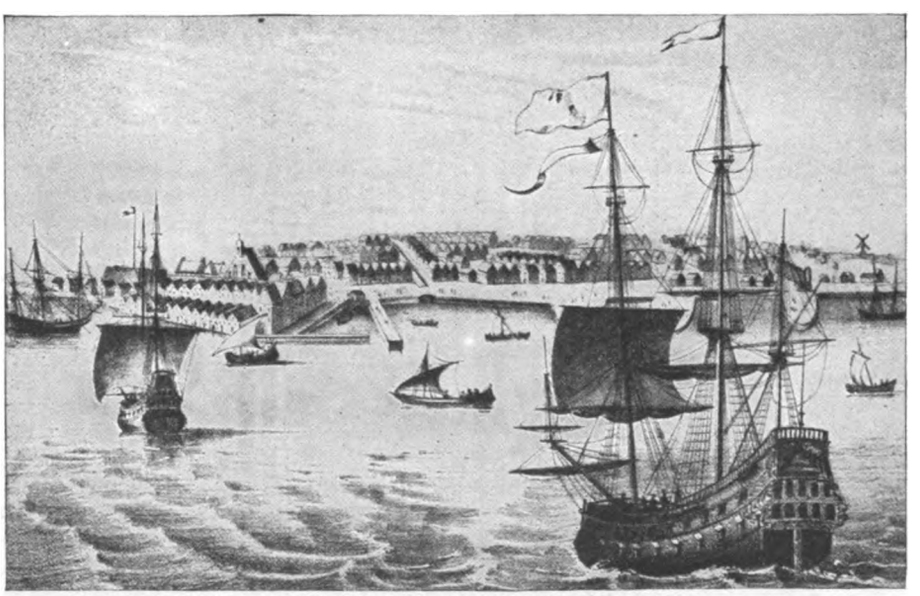
A year later, the obnoxious Stamp Act is repealed and quickly the tide of public opinion sweeps in the opposite direction. Again there is a bonfire upon the Bowling Green, this time a fire of joy and not of derision. Again there is a meeting in Burns's Coffee House, but this time the Government is commended and a petition is gotten up requesting that a statue of King George be placed in the Bowling Green, to show the appreciation of the people for the repeal of the Act.

Cattle Fair, Bowling Green, Founded by William Kieft, 1641
(Famous Tapestry Now Hanging in the Hotel McAlpin, New York)

The picture changes again and on April 23, 1775, a wildly riding courier is seen. He bears the news of the battle of Lexington. At a dozen towns the inhabitants have delayed him by questions and demands, until he has been four days on the way. Slow, indeed, is the progress of his message compared with the time when, undisturbed by anything short of earthquake, news will travel through threads of copper from Boston Town to Manhattan in fewer minutes than the days now required.

A year passes and all is excitement as on July 4, 1776, that immortal document, the Declaration of Independence, is signed at Philadelphia. News from that city to New York comes in a day, but the time when within a single minute after the wish is expressed, William Penn and Father Knickerbocker may engage in conversation without leaving their respective homes, has not been seen even in the visions of the scientist, Benjamin Franklin.

A few days of preparation elapse, and then on July 9, 1776, the Declaration of Independence is read by General Washington to the militia assembled on the Common, now City Hall Park. Wild enthusiasm ensues and the crowd sweeps down Broadway to the Bowling Green, tears down the statue of King George so recently placed and breaks from the top of the fence posts the royal coat of arms. Fortunately, the statue is made of a useful metal, and, tradition says, it was finally returned to Royalty in the shape of bullets from the American muskets.



New Amsterdam (New York) About 1667. From a Rare Old Print

The Bowling Green is becoming old and the years pass rapidly. It is 1788 and the Assembly of New York

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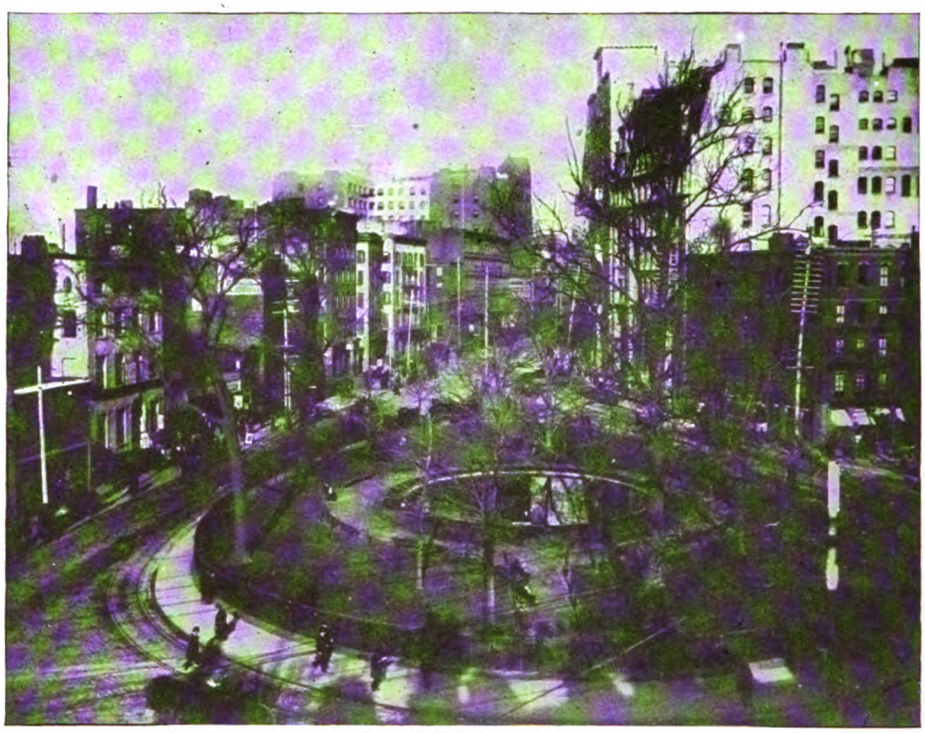
State is debating as to whether or not that State shall vote in favor of the newly proposed Constitution of the United States. Popular feeling runs high and the forerunner of the torchlight processions, so popular in after years, streams down Broadway in the wake of the miniature warship "Hamilton." At Bowling Green the procession stops and the ship is safely deposited there to remain for a year, during which time the Constitution of the United States is finally ratified by all of the States.

The Bowling Green continues to watch over the history of New York as the Government House is erected on the site of the old Fort; as the steamship comes with its speedier travel, watched over by Robert Fulton in his residence adjacent to the Green; and as the sending of messages by post becomes speedier and safer through the medium of well-organized and well-managed stage lines. Then the railroad replaces the stage and intelligence travels still more rapidly. Gradually the character of the houses and buildings around the Bowling Green changes, and business replaces residences. Gradually a network of wires surrounds the Green, and then the day of the telephone has come.

In 1888, Cortlandt central office was opened, taking in all of Manhattan Island south of Chambers street. From this territory, which now seems so large from a telephonic standpoint, have been taken the areas covered by Broad, John, Rector, Beekman, Hanover, and Barclay. In the near future, Bowling Green will be added to this list, and in the years to come the territory south of Rector and Wall Streets will be served under the "random" method jointly by the Broad, Hanover, and Bowling Green central offices.

But during the years which now span the telephone life of the Green, wonderful changes have come to it. The old dingy business buildings surrounding it have given way to the stately Custom House, designed by that genius of the architectural world, Cass Gilbert; and to clean cut modern office buildings, the first of which has appropriately been called the Bowling Green Building. Under the surface of the ground near the Green are hidden the multitude of copper threads through which pass the life currents of the myriad telephones surrounding it. Around it, driven by unseen forces, circles a never-ending stream of surface cars, so different from the horse-drawn vehicles of a former day; while under the Green itself pass, unnoticed, the long trains which supplement the now inadequate surface and elevated railroad systems, at one time so capable of carrying all of the city travelers.



Bowling Green in the Days of Telephone Poles on Lower Broadway

Peter Stuyvesant Punishing a Citizen
From an Old Print.

In its own way the modern world has endeavored to deal fairly with the Bowling Green. The iron fence which once enclosed the statue of King George has been carefully preserved, even the original foundation stones of the fence still surround the Green, and the passerby may still note the rough tops of the fence posts from which the British coat of arms were broken so long ago. In exchange for a few square feet of land and the trees which progress has ruthlessly destroyed, the Bowling Green so well known on the surface has had added to it an underground Bowling Green on the greatest of the travel arteries of the Greater New York.

Wonderful, indeed, and inextricably woven with the history of Manhattan Island, yes, and with the history of the whole country, has been the history of the Bowling Green. What more natural than that the name "Bowling Green" should have been reserved for years for use in the telephone nerve system of the greatest city in the world. And what more natural than that, when the time came, its selection for this purpose should have met with universal approval.

When Hogan Telephoned

IN England, where telephone service has not become more than a novelty for many people, and where it is an actual event in the lives of some to use the precarious instrument, Hogan the elder, so the story goes, was running the stables in the absence of the younger men at the front. He had been sent to telephone for feed—hay, straw and oats—and he had great difficulty in getting his connection.

At last the dealer answered, and Hogan voiced his complaint.

"I say, we're waitin' for that last order of hay, straw and oats. We want it at once. Hay, straw and oats."

"Very good," came the answer, "but who's it for?"

"Arr, now," said Hogan, "would ye try to be funny with an ould man what's doin' his bit? It's fer the horses, av coorse."

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Reducing Costs by Compressed Air

Telephone Subway Work Efficiently Shortened by Air Drills

By Clifford M. Hartley, Assistant Engineer, Empire City Subway Co., Ltd.

THE age in which we live is, above all else, a scientific and a mechanical one. The visual evidences of the achievements of science are round about us everywhere. On every hand we see the wheels revolving; we hear the purring of the machinery that carries us on to industrial greatness. In workshop and factory, in mill and foundry—on the farm, over prairie and desert—everywhere the machine now performs the work formerly toiled by human hands, or else left undone.

Possibly there is no field of endeavor in which this fact is more strikingly demonstrated than in the contracting business. The growing scarcity of labor, the mounting costs of labor and materials, and the resultant necessity of keeping costs down through the development of labor-saving machinery, are factors which have effected this result.

In all branches of contracting work this tendency is apparent—the tendency to perform by mechanical means, rather than by hand, every operation that may be efficiently so done. Thus we have steam, gasoline, and electric shovels, drag-line excavators, various types of power hoists, and trenching machines for excavating. We have concrete mixers and conveyors, and, a very recent development, a machine for backfilling trenches. There are, in fact, mechanical units for the performance of almost every operation in construction work. Many of these are operated by compressed air, and it is of the latter class, or such among them as may be used on electrical subway work, that we wish to treat in this paper.

The construction of electrical subways for telephone and other low tension cables throughout the large territory covered by the Boroughs of Manhattan and the Bronx involves work under widely varying underground conditions. We have already, in previous articles, drawn attention to the difficulties arising from the congestion of subsurface structures beneath most of the streets of New York City, but there are many natural, as well as man-made, barriers to be found, as well.

Sand, loam, quicksand, soft rock or shale, hard rock—almost any and every geological formation may be encountered somewhere beneath the surface of Manhattan Island. The excavation of

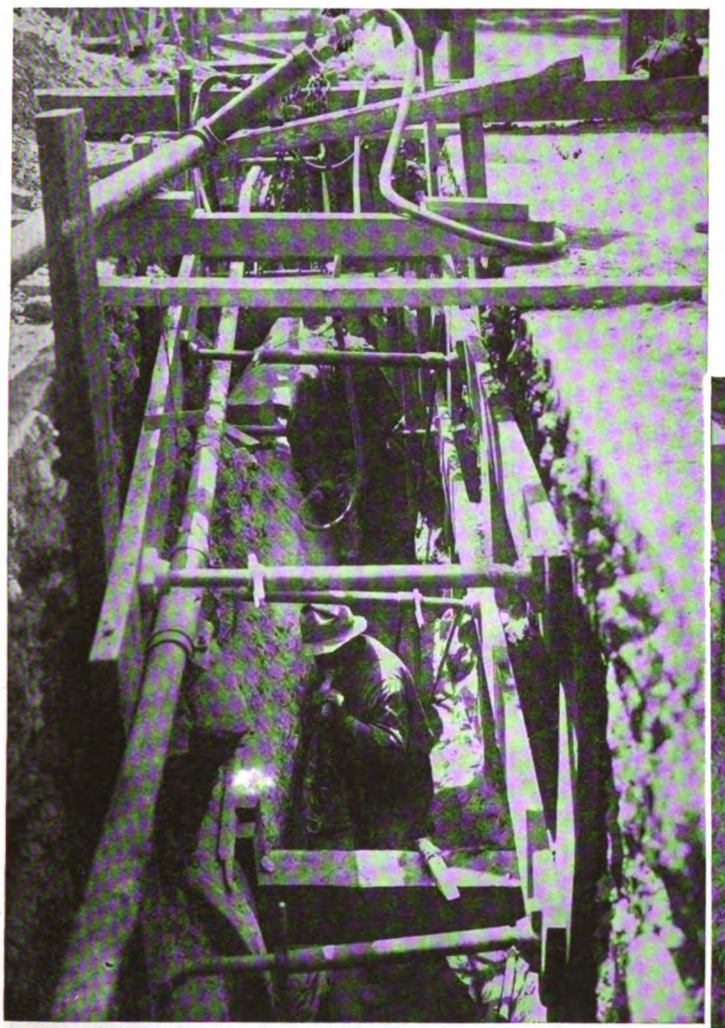

Fig. 1. Drilling Rock for Blasting, in Trench on Broadway, Between 107th and 108th Streets

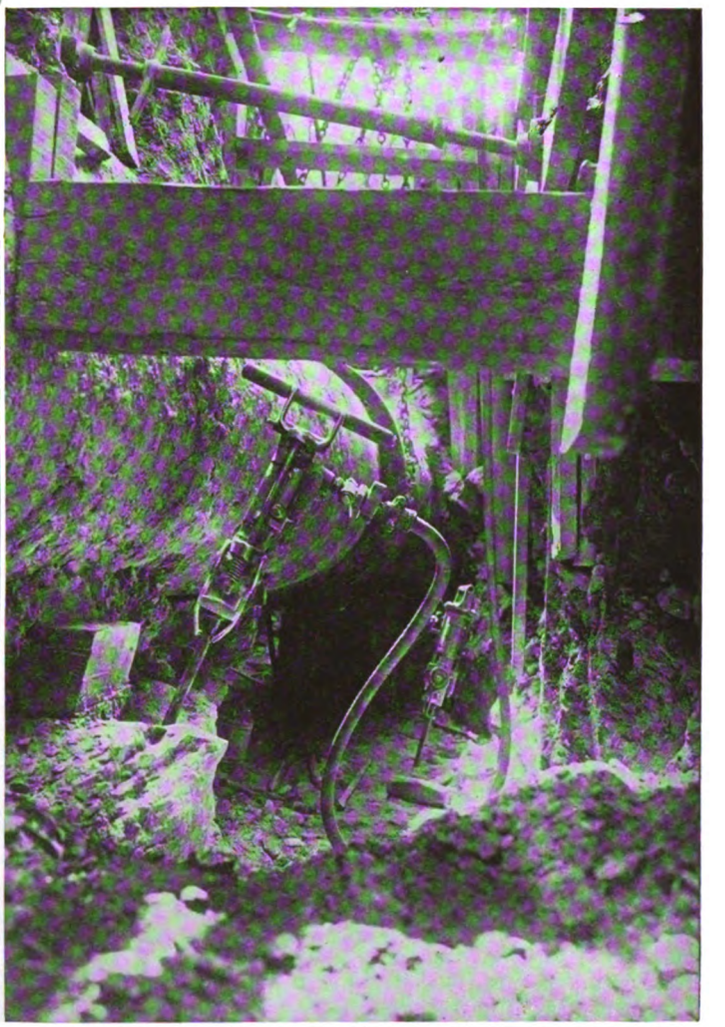

Fig. 2. "Jackhammer" Drills in Bottom of Subway Trench on Broadway. Showing a 36-inch Water Main Crossing the Trench. The 30-duct Telephone Subway Runs Underneath the Pipe at this Point

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trenches through these different formations necessitates methods for overcoming the obstacles, and reducing the operations involved to their simplest and most efficient forms. Much of this work may be best performed by compressed air.

Fig. 3. Hammer Drills Cutting Asphalt Block Pavement and Concrete Base, on Broadway, North of 187th Street

The use of air in its lower condition of compression for power and for mechanical purposes has been known from the earliest ages, and antedates any knowledge we possess of the use of steam by many generations. Two thousand years before the Christian Era, air under pressure was used in reducing metals from ores, and in forging iron and steel. In China, India, Burmah, Borneo, and Africa the primitive methods of compressing air are still in use. The airtreading box, the wooden cylinder and piston, and the Chinese windbox are the common devices employed among these peoples for producing the wind blast.

It would require too much space here to trace the development of compressed air machinery from these early forms up to the present time, but it is interesting to note that the question of compressed air for machine driving, crane hoisting, and other mechanical purposes, was agitated in England in 1840. From that time on the progress in this field has been rapid, and the present efficient prosecution of mining, quarrying, tunneling, and subway work, as well as many other operations of lesser magnitude, is largely dependent upon compressed air.

The first successful use of an air-compressing plant was at the Mont Cenis tunnel through the western Alps, in 1861–1862, and probably the first compressors used in the United States were employed on the construction of the Hoosac tunnel, in Massachusetts, in the years 1865–1866. These early types were driven either by water power or by steam.

The development of the internal combustion or gas engine has done much to foster the use of compressed air on work of a shifting character, such as trench work, of which the subway used by the Telephone plant is an example. It is of course necessary, on construction of this sort, to have a compressor that may be readily moved from place to place. Ours, for instance, must be, as a rule, shifted from one job to another at short intervals, and the gasoline-driven machine has solved the problem arising from this fact. There are, however, for permanent installations, compressors run by steam and by electricity, and it is economical to install the latter type on work that may last several months, but not otherwise.

Coming down to our own case, or the use of this form of power on the construction work of the Empire City Subway Company, we find that it is, in general, used for three different purposes; namely, drilling rock, breaking concrete pavement, and tamping backfill. It is in the first of these that it finds the greatest and most important use.

Prior to the year 1912 the rock drilling operations of this company were performed almost entirely by hand, except in cases of large rock jobs, when steam drills were used. With the acquisition of portable gasoline compressors, however, hand drilling has become practically, and steam drilling altogether, a thing of the past.

The air compressors used on the work of the subway company are four in number, ranging in size and capacity from a 27-H.P. machine with a capacity of 150 cubic feet of free air per minute, to a little machine of 3½ to 5 H.P., delivering 24 cubic feet of free air per minute. They are all mounted on wheels, and may thus be easily hauled from one job to another by a team of horses. The smallest, however, weighs but 1,200 pounds, and may be readily moved around by a couple of men.

The rock drill, in the operation of which is found the principal use for compressed air on our work, was invented in 1849 by J. J. Couch, of Philadelphia. Couch's machine, and its immediate successors, were steam-driven. In 1852, Colladon proposed compressed air for operating rock drills in the Mont Cenis tunnel. His idea was developed by Sommeiller and others, and in 1861 air-driven drills were first used on that work.

Fig. 4. The 150-foot Compressor Supplying Air for Pneumatic Rammers in Trench on Burnside Avenue, East of University Avenue

Since that time, the rock drill has been developed to a high point of efficiency. At the present time there are several forms; some mounted on tripods, some on shafts or posts (used

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principally in mining) and, the latest development, the small hand hammer-drill. The latter is the type in use by this company. There are several makes of this form of drill, among which is the well-known "Jackhammer." The first and second illustrations show two of these drills in a trench on Broadway, between 107th and 108th streets. With these machines, one may drill a hole from 6 inches to 6 feet deep and from 1¾ inches to 1 1/16 inches in diameter. At the same time, they have reduced the cost of drilling, on an average, about 86 per cent. In other words, it costs but one-seventh as much to drill holes for blasting by air as by hand.

A more recent application of compressed air power on our work is found in the use of rock drills for cutting and breaking asphalt pavement and the concrete base on which it is laid. The removal of this concrete foundation, in many cases, proves a considerable item in the excavation of a trench. It may vary in thickness from 4 inches to 12 inches, and in the latter event may constitute nearly one half of the total excavation, in a trench for a small subway. It may thus be seen that the economical removal of such concrete has an important bearing on the cost of the work.

The ordinary method of breaking up this concrete is by means of "bull-points" (long, pointed chisels), driven generally by two men with sledges. This method is admittedly slow, and its performance has for some time rankled in the breasts of those concerned with the efficient conduct of the work. Compressed air, made available for this purpose through the development of a small compressor of sufficient capacity to operate one "gun" or drill, and which may be easily hauled about at will, appears to be the solution.

The drills used for this purpose are Sullivan hammer-drills equipped with a steel about 18 inches long, cut from a piece of drill-steel, and pointed on the end. One man operates the compressor and the drill, and with this outfit we have broken up concrete base much faster than by hand, and at from one-third to one-fifth the cost. In view of this fact, it has been found economical to place one of the larger compressors on big jobs, even in cases where no rock excavation is anticipated, and to thus cut and break up all the pavement by air. The third picture shows two drills, supplied by a 150-foot compressor on Broadway, north of 187th street. The drill-runner in the foreground is breaking up the concrete base, while the one in the back-ground is cutting the asphalt preparatory to removing it.

We have now shown the application of compressed air appliances, or tools, in connection with the excavation of our trenches; but there still remains one more process employing air under pressure for power, and that is trench tamping with pneumatic rammers.

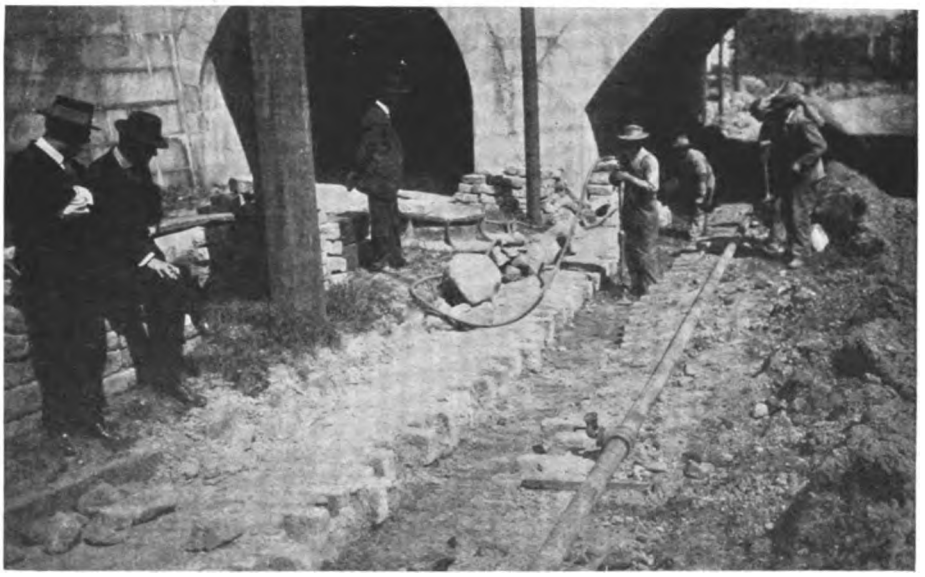

Fig. 5. Pneumatic Tamping Machine or Rammer, at Work Tamping Backfill in Trench on Burnside Avenue, East of University Avenue

Practically all of the trenches excavated by this Company are in paved streets, and the most important point in the backfilling of such excavations is the proper tamping, or compacting, of the material. Tamping by hand is universally recognized as expensive, and, at the same time, quite often inefficient. It is well, therefore, where practicable, to perform this work by mechanical means.

The pneumatic rammers we use are known as the "crown floor rammers." They use normally 28 cubic feet of free air per minute, and were designed primarily for use in foundries, for ramming sand around castings, but have shown themselves to be well adapted to trench tamping.

The machines operate on much the same principle as a rock drill, and are simple in construction. As with the concrete pick, an experienced drill runner can produce the best results, but any fairly intelligent laborer will soon become proficient. The fourth and fifth illustrations show a compressor and one of the rammers at work in the trench on Burnside avenue, east of University avenue.

Comparative tests of hand tamping and machine tamping have shown that the cost of the latter is about one third the former, and, at the same time, the backfill is much better tamped.

The practice of the application of compressed air, or rather, of small portable gasoline-driven air compressors, to trench work, is still in its infancy. Improvements are being made from time to time in this class of compressor, and it is probable that it will not be long before there will be on the market a small machine which will fill the exacting requirements of this branch of service. It is at present a difficult matter to find one that is small and light enough to be easily handled by the men, and at the same time capable of furnishing enough air to operate efficiently a rock drill or a pneumatic rammer. The one in use on our work, for instance, will not produce the 50 to 75 cubic feet of free air per minute required to run a "jackhammer" drill.

Considering the question of the use of compressed air on trench work in its broader aspects, there are two points which should be emphasized. Primarily, we run our drills and other tools by air in order to prosecute the work in the most efficient manner—in other words, at the lowest possible cost, and in the shortest possible time, and in these two considerations may be found the actuating motives. The cost of a construction job is affected by the time consumed in completing it. Overhead costs, made up, in this case, of the salaries of engineers, foremen, inspectors, the clerical force, watchmen, and others engaged in non-productive labor, are present throughout the continuation of a job, whether it take one month or three. Therefore, the quicker the work is completed, the lower will be the percentage of overhead cost. The use of any machinery which tends to hasten results brings us nearer to the attainment of perfection; and the Construction Department of this Company, under the direction of Mr. Henry S. Swain, chief engineer, is ever on the alert for improvements to, and refinements in, the methods of carrying on the work, keenly realizing that in every industry, in this age of mechanical wonders, the methods of to-day may be obsolete to-morrow.

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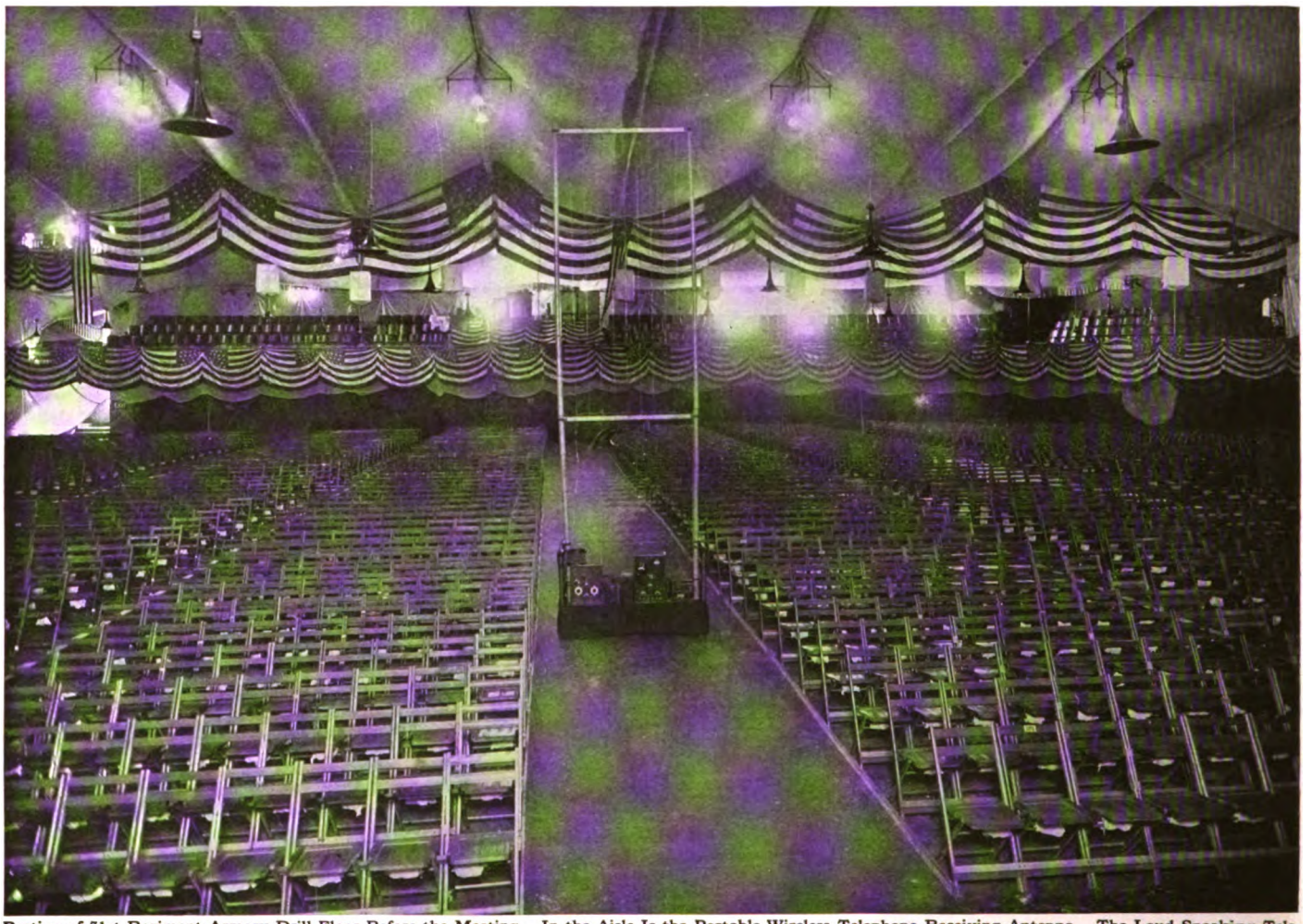
The Telephone Society of New York

Celebration of 20th Anniversary at 166th Meeting Held October 10, 1916



Portion of 71st Regiment Armory Drill Floor Before the Meeting. In the Aisle Is the Portable Wireless Telephone Receiving Antenna. The Loud Speaking Telephone Transmitters Are Also Visible

BEFORE the clock had finished striking eight, the Telephone Society of New York was ready to begin its meeting on Tuesday evening, October 10, with more than 5,400 members present. In New York, there were 4,000; Albany, 325; Kingston, 75; Newburgh, 85; Glens Falls, 70; Syracuse, 233; Utica, 150; Binghamton, 94; Buffalo, 225; Rochester, 107, and Jamestown, 45, using in all 2,198 miles of circuit.

Promptly at 8.20 o'clock, in strict accordance with the program, these 5,400 members located in the eleven cities named were tied together in one body by the lines of the Universal Bell Telephone System, and for forty-five minutes participated in a program of speech-making, music, and business.

At nine o'clock the gathering in New York began a local program while for fifteen minutes the other cities remained tied together for a lecture on "The Triumph of Science," by Mr. G. A. Leimbach, speaking in Newburgh.

At 9.15 o'clock, still in strict accordance with the prearranged program, the ten up-State cities were connected with the Transcontinental telephone line and were given a demonstration which lasted until nearly ten o'clock.

The 4,000 members gathered in New York were celebrating the twentieth anniversary of the Telephone Society of New York, in which the up-State sections and chapters participated.

Owing to the nature of the program, which was designed to be varied and interesting to every member present, the time allotted for speeches was very brief. After the roll call of the cities, and after each had reported, giving the number of members present, the president of the Society, Mr. I. J. Thorp, introduced Mr. F. H. Bethell, vice-president of the New York Telephone Company, as follows:

"Twenty-five years ago a small boy was busily engaged in sweeping out the office, running errands, holding the Company's horse and generally making himself useful. He is going to say a few words to us to-night. As you may suspect, he has a better job now, and by hard, consistent work, step by step, during the past quarter of a century, he is now vice-president of the New York Telephone Company, president of the Bell Telephone Company of Pennsylvania and of the Chesapeake & Potomac Telephone Company and their associated companies. He has under his management almost as many telephones as there are in Great Britain, France, Russia, and Germany combined. Gentlemen, I

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present one of our fellow-members, Mr. Frank H. Bethell."

Mr. Bethell then ascended the platform on which the telephone was placed, and spoke to his far-flung audience as follows:

Mr. F. H. Bethell's Address

"WE are gathered together under one sky (the standard opening, used for so long, about being 'gathered together within these walls' will not serve us) to celebrate the opening of the twentieth season of our Telephone Society. Felicitations are in order; the Society has proved its value both to the business and to its members or it would not to-night be celebrating with so much feeling its passing into the third decade of its existence. As your card denoting membership in this great Society is nothing if not a badge of loyalty, then we will say we are gathered together under one banner—the unsullied banner of the Big Blue Bell.

"We are strung (but not being strung) on a wire starting here at the place of your President and extending to the places where are gathered some six thousand happy members of the highly respectable and greatly respected family of Bell, the head clansman of which is Theodore N. Vail, a standard-bearer worthy as his predecessors were worthy of the great honor that is his. Whether or not the head of our own Empire Branch—and you all know who he is—is a real leader is nothing to start an argument about in this Society. His fame has gone abroad, and fame it is because his leadership is established in the minds of the public to just the extent that it is reflected through the organization, through this Society, and through each and every member of it. In the 'Ad-Visor' column of the New York *Tribune* of recent date—a column widely read throughout the State—there appeared a letter in which the writer said, 'I have often thought that it would indeed be a pleasure to meet the genius (for I believe that it really takes a genius) who is at the head of that wonderful organization, the New York Telephone Company, the man who really directs the entire force under command, and has made his personality felt through the thousands of employees, high and low.'

"And that, my friends, is the way they feel about one of our presidents. But they are all alike—Mr. Thayer, the big boss of you Western Electric fellows, stands with Mr. Vail and Mr. Bethell as a recognized leader of men.

"To-night, with the tongues of New York brought close to the ears of Kingston, of Newburgh, of Albany, of Glens Falls, of Syracuse, of Utica, of Binghamton, of Jamestown, of Rochester, and of far-away Buffalo, we rejoice in each other's company and we marvel at the wonderful changes that have come to the art of telephony since this Society came into existence twenty years ago. This is indeed a wonderful party—made possible only by mighty strides forward in our development.

"But the years go rapidly by, and the wonders of to-day are the commonplaces of to-morrow. What a few years ago was Bell's toy is to-day the close companion and indispensable ally of every inhabitant of the civilized world—and so to-morrow the novelty of an address being delivered into a telephone and listened to by thousands of people gathered together in different and distant cities will have disappeared and it will be the practical, commonplace thing to expect.

"We will go forward with this great institution of ours, seeking new worlds to conquer the while providing the people of our country with the service that has done and is doing so much to make of the United States a nation—a nation great and strong—destined to be, because of the enterprise of her people, the most powerful nation the world will ever see.

"Our contribution to the nation's strength is of major importance. The responsibility which we have assumed all but staggers the imagination, but we have assumed it cheerfully because of our abiding faith in our ability to make good.

"We are big, but we are not unwieldy. We are strong, but we are not arrogant. We are firm, but we are not tyrannical. We are in the broadest sense efficient and, like the Father of our Country, we are 'first in war, first in peace, and first in the hearts of our countrymen.'"

Albany was then given the wire, and Mr. C. E. White, chairman of the Hudson Section, introduced the Honorable James H. Manning, a member of the executive committee of the board of directors of the New York Telephone Company, and former president of the Hudson River Telephone Company, who spoke as follows:

Mr. James H. Manning's Address

"THE Hudson Section of the Telephone Society of New York, always wideawake and dependable, presents its compliments and greetings to all within the range of my voice at this monster and enthusiastic meeting. Personally, I feel highly honored because of being permitted to say a few words to such a representative audience of old and new friends and associates. The immortal Washington was right when he said: "Let your discourse with men of business be short and comprehensive." We are justly proud of the fact that we occupy the territory, known as the Hudson Division, which constitutes one of the strongest links of the great chain of the New York Telephone Company; that our main office building, new and architecturally imposing, is in the Capitol City of the Empire State, where the famous scientist Joseph Henry was born, and that from a humble beginning in July, 1879, the number of telephone subscribers has grown from twenty-seven to approximately 135,000.

"We have kept abreast of the times and with an efficient force we will continue to make rapid strides.

"Need I remind you that this is the age of physical and intellectual force? Currents of opinion are conveyed by electric currents over the whole world and all must admit the telephone is the great nerve force of the commercial being.

"We place in the foremost rank of men notable for genius and distinguished success Dr. Alexander Graham Bell and Theodore N. Vail. Each has acquired deserved prominence in his particular field. The latter in speaking of the service of the Bell System has said:

> As it stands to-day it is the result of organization and system in which every individual member is a free, active and responsible agent within his own sphere of action and the limitations of his duties. Each individual feels he is an essential and important part of the whole and recognizes his obligatory relation towards all other parts and his accountability, responsibility and subordination of the organization of which he is a part.

"The forefinger of the trembling hand of time points to the dial warning me to stop. Before saying good-night, I wish to impress upon your minds that we are *not* from the town of No-Good on the banks of the River Slow, where the Some-Time-Or-Other scents the air and the soft Go-Easies grow! We do not live in the valley of What's-the-Use, in the province of Let-Her-Slide; that's the home of the reckless I-Don't-Care, where the Give-It-Ups abide. That town is as old as the human race. and it grows with the flight of years; it is wrapped in the fog of the idler's dreams, its streets are paved with discarded schemes, and sprinkled with useless tears."

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The wire was then given to Buffalo and Mr. A. F. Neal, chairman of the Western Section of the Telephone Society, introduced Mr. T. T. Ramsdell, a director of the New York Telephone Company, and former president of the Bell Telephone Company of Buffalo. It was with a ring of humor in his voice that Mr. Ramsdell began the following address:

Mr. T. T. Ramsdell's Address

"IT is unfortunate for all of you that I have been requested to limit my speech to two minutes! You will remember, however, that the good things in this life are, as a rule, dealt out sparingly. Mr. Bethell, too, was hampered by a time limit, but what a masterly keynote he has sounded and how aptly have his words, in the full swing of their inspiration, found echo in the eloquent speech of Mr. Manning, and in the hearts of us all. And now we, in 'far away Buffalo,' the seat of the Western Division, send forth our greetings, and offer our tribute of respect, of fealty, and of congratulation on this twentieth anniversary, not alone to our honored President or to the other great chiefs who have made possible the wonderful development in telephony and the existence of this Society, but to all assembled at this State-wide wire-fest of loyal Bell men.

"From its beginning down to the present day this Society has been a power for good, and, as we look back across the years, each one from the viewpoint of his own chapter or division, we contemplate with enthusiasm and with grateful appreciation the social, the instructive and the uplifting happenings that have set their seal upon our memories and inspired in us a faith in our big Bell institution that will endure until the 'shadows lengthen, the fever of life is over, and our work is done.'"

Syracuse was the next in turn, and taking up the wire Mr. E. M. Gladden, chairman of the Central Section, introduced Mr. D. C. Cox, division general manager, New York Telephone Company, and a former president of the Telephone Society of New York, Mr. Cox addressed his hearers in the following words:

Mr. D. C. Cox's Address

"IT is a rare privilege to address, as I do, practically the entire membership of the Greater New York Telephone Society at one time, and you will, I am sure, pardon the reasonable pride of one who was a humble instrument used in binding together the membership of the entire State into one Society.

"Service in the Company has always been to me a privilege and an honor, and service with the Telephone Society an especial one. We telephone men may not bear the decoration of a cross of some device and material, but we are all of us members of a Legion of Honor—a Legion founded on Liberty, Equality, Fraternity. Our banner bears the sign of the Blue Bell, and is inscribed with the one word 'Service.'

"All Hail! Mighty Standard Bearers—Vail, Bethell, and Carty.

"Officers and members of the Telephone Society of New York in Jamestown, Glens Falls, Utica, Rochester, Kingston, Binghamton, Newburgh, Buffalo, Albany, and New York City: Greetings and congratulations from Syracuse on this the Twentieth Anniversary of our organization."

Mr. Thorp then announced that as the Society was celebrating its twentieth anniversary, he would call upon Mr. J. S. McCulloh, one of the founders of the Society.

Mr. McCulloh, general commercial superintendent, New York Telephone Company, then told the story of the origin of the Telephone Society twenty years ago.

Mr. J. S. McCulloh's Address

"I APPRECIATE the privilege of speaking to this wonderful assemblage of men through the medium of our own marvelous telephone system. You may ask why an otherwise generous Entertainment Committee should test your forbearance by compelling you to listen to me. The answer is simple: I have the honor to be one of the three originators of the Telephone Society of New York, and our President thought it would be of interest on this twentieth anniversary of the founding of the Society, to give you a brief sketch of its origin.

"In the hot summer of 1896, three men employed in the Long Distance Operating Room at New York developed a great thirst—it was a thirst for knowledge—and being dissatisfied with the performance of their bosses with respect to the quantity and quality of knowledge imparted to them, decided to get together with other men who thought they knew something about the telephone business and talk it over. Also, they wanted to establish more friendly relations with other telephone men. At that time relations between Long Distance men and Local men were not always cordial. Many a Long Distance man regarded a Local man as a very inferior being, a duffer, or worse, and the Local man regarded his Long Distance brother as a purse-proud individual with the "big head." In a measure, both were right.

"The three men referred to were Ashbel Green, Wire Chief; John J. Gibson, Inspector, and J. S. McCulloh, Assistant District Superintendent. The Long Distance Central Office plant was a small affair, switchboards and test boards all being contained in one end of one wing of the seventh floor of the Local Company's building at 18 Cortlandt street, New York. Private offices, retiring rooms and other such comforts of the present luxury-loving age were unknown in our place, so Green, Gibson and I chose for our pet roost a big radiator back of the switchboard, by a window looking out over the old buildings to the north on Dey Street. There we ate our lunches, swapped lies and determined the destiny of nations and occasionally smoked (contrary to rules). There was not a great deal of space in which to lounge and by force of circumstances these three statesmen got very close together.

"It was there, I believe, during June or July of 1896, that a discussion arose over the advisability of forming a society composed of telephone men, the object of which should be to "chew the rag" and make friends. Green and I had been working on a railroad and had seen something of the good results secured through similar railroad societies. We decided to try it out and a call, signed by forty-six men, dated September 22, 1896, was issued for an informal meeting to be held in the Engineering Department, 153 Cedar Street, on Saturday, October 3, 1896 at 2 P. M. This, I believe, was the first meeting of the Telephone Society. Mr. A. A. Marsters acted as secretary and kept the minutes. The idea was generally discussed and approved by about twenty men there present. Committees were appointed to secure the approval of Mr. E. J. Hall, General Manager of the Long Distance Company, of our proposed society and to draft a constitution and by-laws. The meeting then adjourned, subject to call.

"As you all know, Mr. Marsters is now the Secretary of the American Telephone and Telegraph Company. He is with us to-night and I am going to hand the wire over to him so that he may tell you what followed."

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Mr. Thorp then said: "In keeping with the spirit of our twentieth anniversary we are fortunate in having Mr. Marsters present, and he will now address us."

Mr. Marsters addressed the assembled Society as follows:

Mr. A. A. Marsters's Address

"IT seems hardly possible that the first meeting which Mr. McCulloh has described to you and which, as he has said, was attended by about twenty persons, can have any relation to this great society and gathering. To-night the parent, the Telephone Society of New York alone, including the different sections, has a membership of over 6,300 and all the other Bell telephone societies in the United States have a membership of about 18,000, making a total of nearly 25,000.

"It is true that Mr. McCulloh's radiator was too small even for that first meeting, which was held on the desks in the Engineering Department of the Long Distance Company. But in these twenty years not only has the growth of the Society been marvelous, but the transformation in its methods complete.

"With Mr. Hall's approval secured, the Society started on its career, but a curious light is thrown on the situation as it then existed when we recall that great emphasis was laid upon the necessity of secrecy and that careful provisions were made for censoring the papers to be read by telephone men to telephone men. Quite a contrast with to-night, when we are letting our 6,300 men in on the secrets of our job. As an aid in the control then thought wise, the first constitution of the Society, after defining its object as 'the study of matters pertaining to the telephone business by means of the presentation and discussion of such subjects by the members and others in meeting,' provided that 'all papers presented or read before the Society shall become the property of the Society.'

"The members could console themselves by remembering that the censorship was not especially directed against them, as less loyal than others, but was only carrying out the policies then in force throughout the business.

"At the outset only employees of the American Telephone and Telegraph Company were allowed to become members. In November, 1897, employees of the New York Telephone Company and the New York and New Jersey Telephone Company were made eligible, and in December, 1904, employees of the Western Electric Company.

"The Society began its activities promptly, holding its first regular meeting at which a paper was read on November 10, 1896. Mr. F. J. Hovey, General Superintendent of the Long Distance Company, made a brief talk on the growth of the telephone business, and Mr. A. N. Mansfield read a paper on 'The Principles Underlying Electrical Transmission of Speech.' Strict secrecy was maintained about what was said.

"Mr. Mansfield was the first president and Dwight N. Marble the first permanent secretary, elected October 20, 1896. Of the charter members, twenty are still in the Bell service, but Mr. McCulloh is the only one of the three originators of the Society now in the service."

IT was an inspiring thing when the strains of "The Star Spangled Banner" were played on a victrola, to hear the sound also come over the wire of the several thousand members of the Telephone Society rising to their feet, and to know that all were standing at attention while the music lasted and Old Glory was unfurled, with a spotlight playing upon it.

An outline of the entire program follows:

The Program

Main Section—New York City

7.00 P.M. Doors to 71st Regiment Armory open.

7.15–8.00 P.M. Informal concert by Blue Bell Orchestra.

8.00–8.05 P.M. Blue Bell Orchestra.

8.05–8.15 P.M. Business meeting:

(a) Introductory remarks by Pres. I. J. Thorp.
(b) Report of the Secretary-Treasurer, J. D. Newman.
(c) Report of Finance Committee, F. L. Devereux, Chairman.
(d) Report of Membership Committee, A. W. Deas, Chairman.
(e) Motion by Mr. Deas to elect new members. Seconded by Mr. F. E. Congdon.
(f) Motion on amendment by Mr. J. H. Gordon, Jr. Seconded by Mr. P. O. Coffin.

8.15–8.20 P.M. Blue Bell Glee Club.

8.20–8.25 P.M. Inter-Society meeting opens, Pres. I. J. Thorp, New York, presiding.

Roll call of the cities in the following order:

1. Newburgh
2. Kingston
3. Albany
4. Glens Falls
5. Utica
6. Binghamton
7. Syracuse
8. Rochester
9. Buffalo
10. Jamestown

Pres. THORP: "Good evening, Mr. Truesdell. Is the line ready for our use?"

Mr. TRUESDELL: "Good evening, Mr. Thorp. The line is all ready."

Pres. THORP: (Speaking from New York.) "Good evening, Newburgh. This is Mr. Thorp of New York speaking."

Newburgh: "Good evening, Mr. Thorp. This is Mr. Bigler, Newburgh, speaking."

Pres. THORP: "We have 4,000 members assembled in New York. How many members are present with you, Mr. Bigler?"

Newburgh: "There are 85 members present."

Pres. THORP: "Thank you, Mr. Bigler. Please give me Kingston."

Kingston: "This is Kingston. Good evening, Mr. Thorp, Mr. Snyder speaking. There are 75 members present in Kingston."

Pres. THORP: "Thank you, Mr. Snyder. Please give me Albany."

Albany: "This is Albany. Good evening, Mr. Thorp, Mr. White speaking. There are 325 members present in Albany."

Pres. THORP: "Thank you, Mr. White. Please give me Glens Falls."

Glens Falls: "This is Glens Falls. Good evening, Mr. Thorp, Mr. Beaton speaking. There are 70 members present in Glens Falls."

Pres. THORP: "Thank you, Mr. Beaton. Please give me Utica."

Utica: "This is Utica. Good evening, Mr. Thorp, Mr. Hartzell speaking. There are 150 members present in Utica."

Pres. THORP: "Thank you, Mr. Hartzell. Please give me Binghamton."

Binghamton: "This is Binghamton. Good evening Mr. Thorp, Mr. Hollenbeck speaking. There are 94 members present in Binghamton."

Pres. THORP: "Thank you, Mr. Hollenbeck. Please give me Syracuse."

Syracuse: "This is Syracuse. Good evening Mr. Thorp, Mr. Gladden speaking. There are 233 members present in Syracuse."

Pres. THORP: "Thank you, Mr. Gladden. Please give me Rochester."

Rochester: "This is Rochester. Good evening, Mr. Thorp, Mr. Mennelly speaking. There are 107 members present in Rochester."

Pres. THORP: "Thank you, Mr. Mennelly. Please give me Buffalo."

Buffalo: "This is Buffalo. Good evening, Mr. Thorp, Mr. Neal speaking. There are 225 members present in Buffalo."

Pres. THORP: "Thank you, Mr. Neal. Please give me Jamestown."

Jamestown: "This is Jamestown. Good evening, Mr. Thorp, Mr. Davey speaking. There are 45 members present in Jamestown."

Pres. THORP: "Thank you, Mr. Davey.

"I feel that the 5,400 members of the Telephone Society of New York assembled to-night in eleven different cities in this great Empire State are to be congratulated on this, our twentieth anniversary meeting, which has been made possible through the wonderful achievements of the great organization."

8.25–8.51 P.M. Addresses to the Assembled Society.

8.51–8.56 P.M. Selection by Blue Bell Glee Club.

8.56–8.59 P.M. Victrola selection, "The Star-Spangled Banner," from New York.

Pres. THORP: "Is there any further business for the meeting to consider?"

8.59–9.03 P.M.

Mr. C. A. SPAULDING from Buffalo: "Mr. President, this is Mr. Spaulding of Buffalo speaking. I move you, sir, that a vote of thanks be extended to the officials of the American Telephone and Telegraph Company, the Western Electric Company and the New York Telephone Company for the courtesy and coöperation they have given us in making this joint meeting possible and such a splendid success."

Mr. WILLIS HILLS from Kingston: "Mr. President, this is Mr. Hills of Kingston speaking. I second Mr. Spaulding's motion."

Pres. THORP from New York: "You have all heard the motion. All those in favor will please say 'Aye.'"

Ensemble: "Ayes" from all members in the eleven cities on the line.

Pres. THORP from New York: "The motion is

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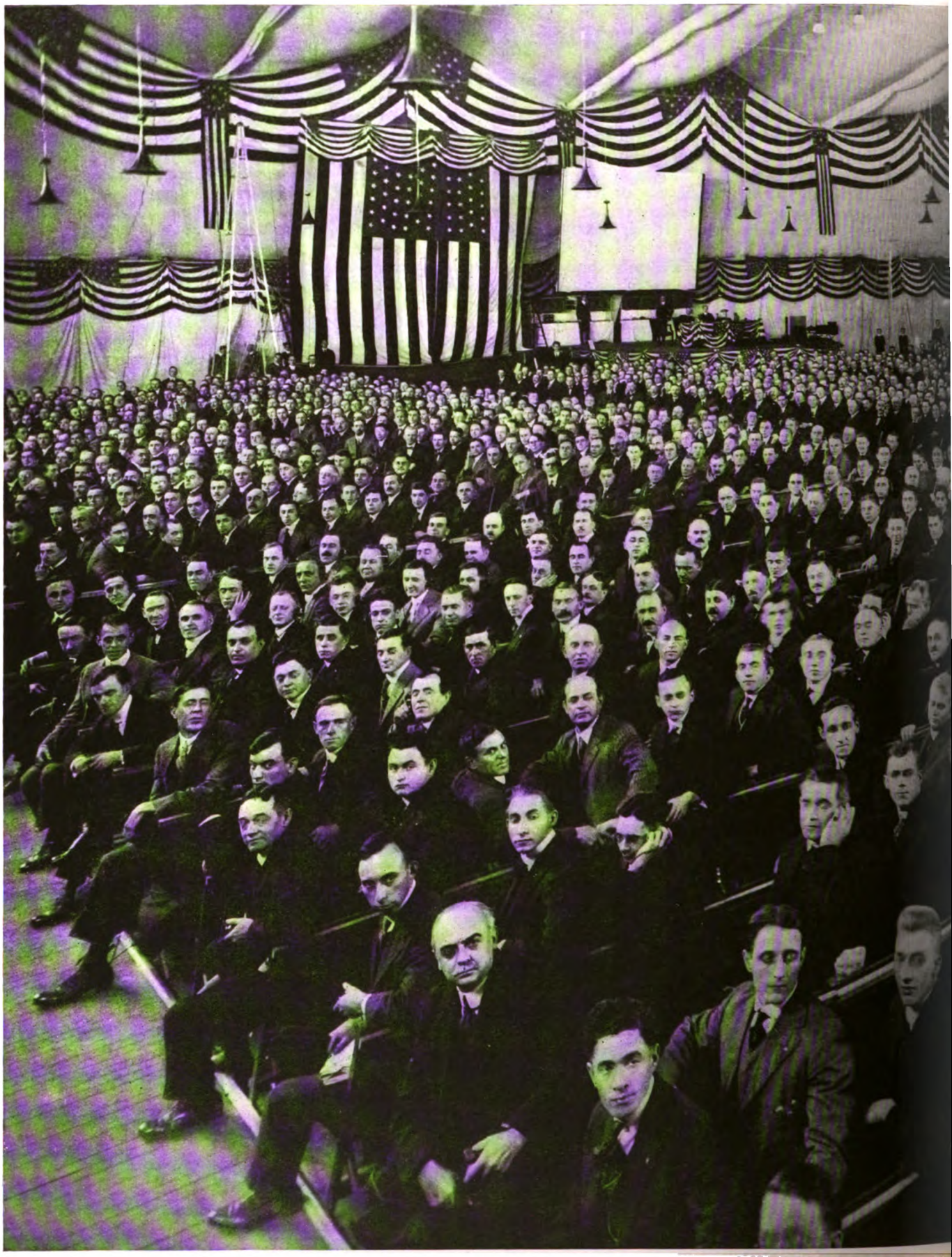

SOME OF THE 4,000 MEMBERS OF THE TELEPHONE SOCIETY OF NEW YORK ASS

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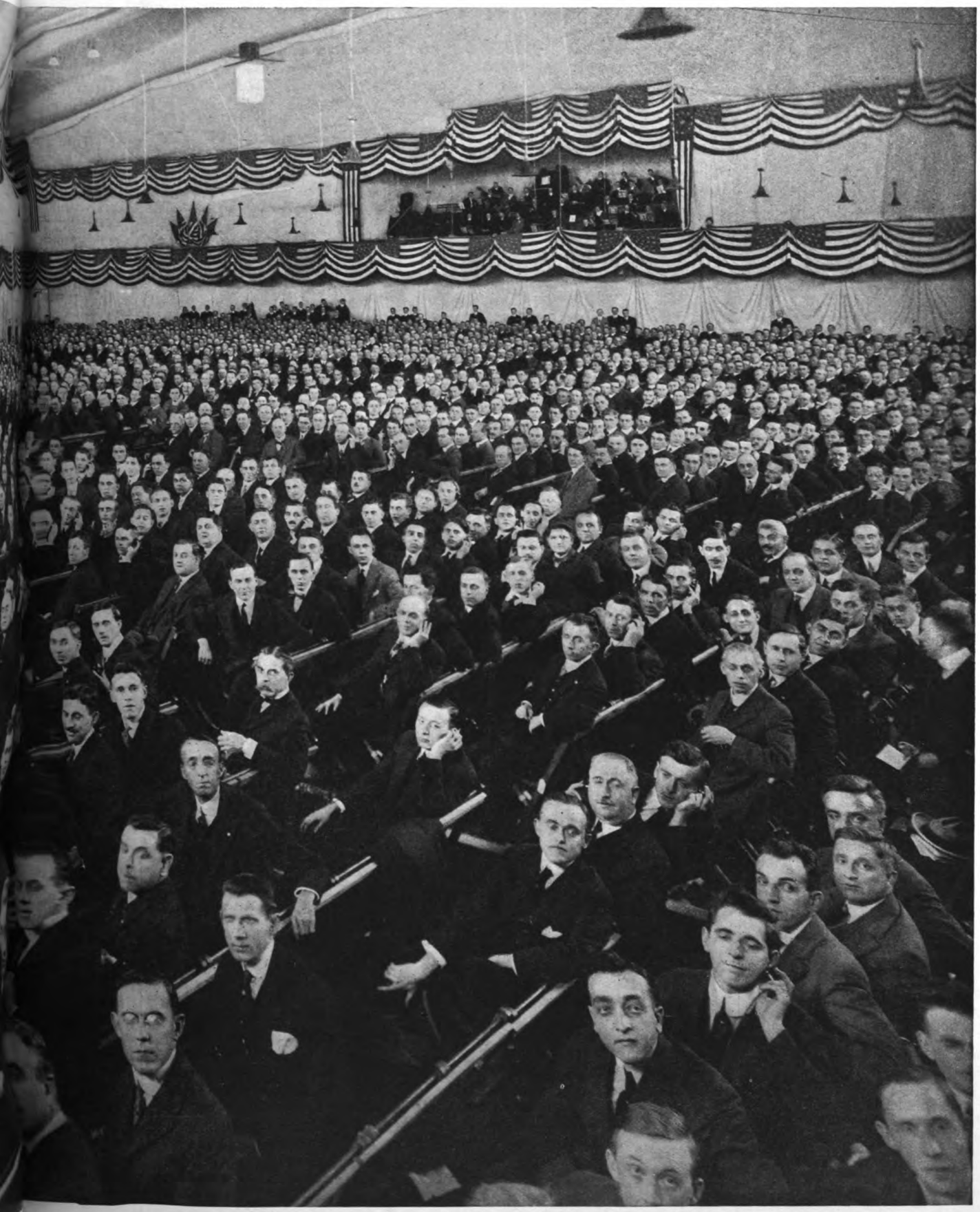

BLED IN THE SEVENTY-FIRST REGIMENT ARMORY, NEW YORK, OCTOBER 10, 1916

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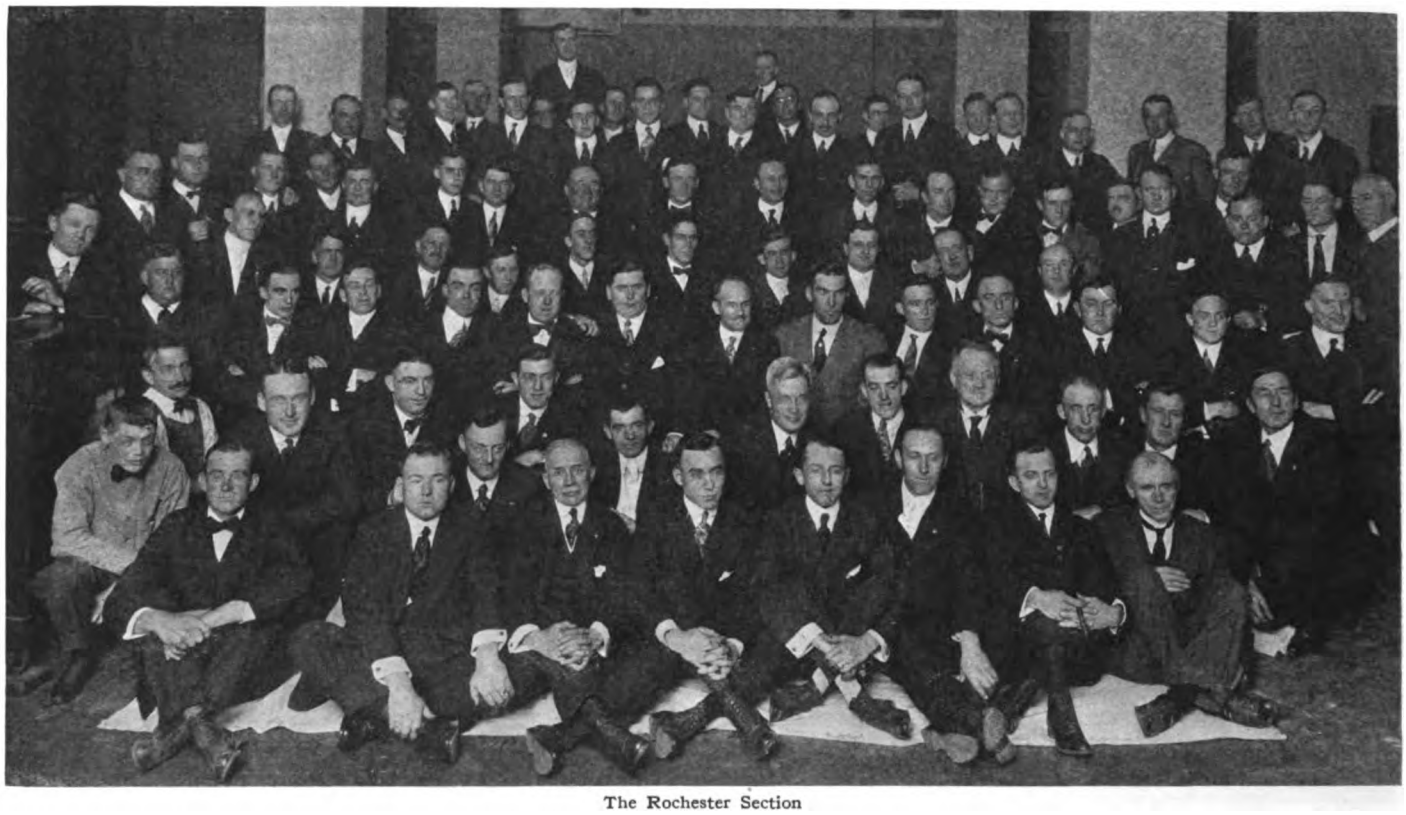

The Rochester Section

carried. If there is no further business a motion to adjourn is in order."

Mr. SEXSMITH from Binghamton: "Mr. President, this is Mr. Sexsmith of Binghamton speaking. I move that the joint session of the Main Society in New York and the Up-State Sections adjourn."

Pres. THORP from New York: "Is the motion seconded?"

Mr. W. J. O'HEA from Rochester: "Mr. President, this is Mr. O'Hea of Rochester speaking. I second the motion."

Pres. THORP: "All those in favor will please say 'Aye.'

"The joint meeting stands adjourned."

The meetings of the Main Society and the Up-State Sections continued as outlined below:

Main Society

9.03–9.08 P.M. Blue Bell Glee Club.

9.08–9.48 P.M.

Pres. THORP: "I am now going to turn the meeting over to Mr. O. B. Blackwell, transmission engineer of the American Telephone and Telegraph Company, who will direct the electrical demonstrations."

Descriptive talk and demonstrations on the subject of "Vibrations," by Mr. O. B. Blackwell and Mr. G. K. Thompson, of the A. T. & T. Co. Engineering Department.

9.48– 9.53 P.M. Blue Bell Glee Club.

9.53–10.00 P.M. Finale—Blue Bell Orchestra.

Transcontinental Demonstration Up-State Sections

Mr. E. W. Bigler, presiding in Newburgh, acted as Senior Master of Ceremonies.

(Up-State) 9.03–9.13 P.M.

Address "The Triumph of Science," by Mr. G. A. Leimbach at Newburgh with members of all Up-State Sections listening in.

(Up-State) 9.15 P.M.

Transcontinental telephone line opens, Mr. Bigelow presiding.

Roll call of important cities along the route of the line, including cities where Chapters are assembled.

Mr. E. H. Powley, division plant superintendent, in Albany exchanged greetings with his brother, Mr. N. R. Powley, rate engineer, Pacific Telephone and Telegraph Company at San Francisco.

Mr. T. T. Ramsdell in Buffalo exchanged greetings with his son in San Francisco.

Musical selection transmitted from San Francisco, "Good-by, Girls, I'm Through."

Mr. H. H. Kennedy in Syracuse exchanged greetings with Mr. P. H. Coolidge in San Francisco.

Roar of the Pacific Ocean accompanied by motion pictures in Syracuse, Utica, Buffalo, Rochester, and Jamestown.

Musical selection from San Francisco, "America."

Good-night roll call of wire chiefs.

FINALE

Albany

At the Hudson Section meeting in Albany 209 new members were elected, making a total of 560, the largest membership in its history.

Following the Transcontinental telephone demonstration, Mr. Manning again spoke to the members of the Section assembled in Albany. He briefly outlined the organization of the Board of Directors, its work, and some of its problems, and explained its relation to the operating departments of the Company. He dwelt particularly on the coöperation

Hudson Section		Chairman	Attendance
Albany	Keeler's Hotel	Mr. C. E. White	325
Kingston	Y. M. C. A. Bldg.	Mr. C. W. Snyder	75
Newburgh	105 Second Street	Mr. E. W. Bigler	85
Glens Falls	Glens Falls Ins. Co. Bldg.	Mr. H. A. Beaton	70
Central Section			
Syracuse	James Exchange Bldg.	Mr. E. M. Gladden	233
Utica	Hotel Utica	Mr. C. H. Hartzell	150
Binghamton	N. Y. Tel. Co. Bldg.	Mr. W. M. Hollenbeck	94
Western Section			
Buffalo	N. Y. Tel. Co. Bldg.	Mr. A. F. Neal	225
Rochester	N. Y. Tel. Co. Bldg.	Mr. J. J. A. Mennelly	107
Jamestown	N. Y. Tel. Co. Bldg.	Mr. L. J. Davey	45
Main Section			
New York	71st Regiment Armory	Mr. I. J. Thorp, Pres.	4,000
			5,409

8.00 to 8.20 P.M.—Brief business meeting in all Chapters in the above cities.

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The Elmira Section

necessary on the part of executives and employees to insure the success of the organization. Mr. Manning praised the efficiency of the Hudson Division organization, with which he is most closely associated on account of his residence in Albany, and commented particularly on the enthusiasm displayed that evening. He also gave a few good sound words of advice.

Glens Falls

At the business meeting preceding the joint meeting, Mr. Geo. E. Fuller was elected chairman of the Glens Falls chapter and R. F. Sheldon secretary-treasurer. Thirty-five applications for membership were received.

Kingston

Before the joint meeting Mr. Willis Hills gave a short talk in explanation of the evening's entertainment, Mr. C. W. Snyder spoke on the membership campaign and Mr. E. H. Greenleaf said a few words about transmission.

Newburgh

Previous to the joint meeting Mr. David Hervey was elected chairman of the Newburgh chapter and D. W. Smith secretary-treasurer.

Syracuse

The Blue Bell Orchestra, which is this year larger and better than ever, provided music before and after the regular program, and during the intermission between the joint meeting and the Transcontinental Demonstration. One hundred and eighteen new members were admitted to the Society, raising the membership of the Central Section to 393.

Binghamton

Before the joint meeting short remarks were made by District Manager W. C. Sexsmith, District Traffic Chief L. M. Smith, and District Plant Superintendent W. M. Hollenbeck.

Buffalo

Twenty-five new members were elected, making the membership 525. Mr. C. A. Spaulding, division commercial manager, made a short address.

Rochester

Nine new members were elected. The following committees were appointed: Papers and Meetings: Messrs. J. H. Brereton, H. B. Mayo, A. A. Nobles, R. M. Bruce. Membership Committee: Messrs. F. L. Simes, H. W. Benedict, R. D. Graham, W. A. Sullivan.

Jamestown

Eleven new members were elected. An incident not on the program which added interest to the local meeting was a conversation held by Mr. F. N. Randall of Ripley, N. Y., with Mr. M. M. Henrichi of San Francisco. A number of connecting company representatives were guests of the Society in Jamestown, among them besides Mr. Randall being Mr. S. C. Crandall of Westfield, Mr. R. A. Hall of Brocton, Mr. A. R. Maytum of Fredonia, Mr. H. N. Palmer of Stedman, Mr. N. W. Landers of Sinclairville, Mr. G. D. Sweet of Panama, Mr. G. E. Dinsbier of Mayville, Mr. M. G. Cline of Clymer, Mr. P. W. Gates of Steamburg, Mr. G. L. Lawrence of S. Stockton, Mr. H. F. Lee of Little Valley, Mr. J. M. Ackley of Leon, and Mr. A. H. Appleby of Kennedy.

As a result of this meeting a chapter will be formed in Jamestown and other meetings held at intervals during the winter months.

After his return from this meeting at Jamestown, Mr. Ackley, an official of the Ackley Telephone Company at Leon, expressed his impressions of the occasion in the following letter:

"THROUGH the courtesy of my telephone friend, Mr. Davey, of the Jamestown exchange, I was permitted to attend a Transcontinental Demonstration of telephone service through the New York Telephone and American Telephone and Telegraph lines at Jamestown, the 10th inst.

"To express it as being 'wonderful' is too tame, as that word is too common. It was something marvelous, and almost unbelievable. If I did not possess a great amount of confidence in the New York Telephone Company I should have a slight feeling that they were 'putting one over on us,' but taking into consideration the fact that Mr. Davey vouched for the reality of it all I shall have to believe mine own ears and feel that I witnessed something that comes as near to the impossible as I ever expected to realize. To hear with such distinctness the roll and roar of the mighty deep, the great Pacific Ocean, 4,500 miles away, seems like a mighty big yarn to spin out to my neighbors and telephone friends generally.

"I cannot help thinking of the marvels of science when I listen to the human voice being transmitted to far distant cities. Omaha, Denver, Salt Lake City, San Francisco, and many other distant places, all with the same distinctness as we find in our every-day telephone service even at short distances; then to complete the marvel to listen to the splash of the ocean waves, and realize the depth of the ocean sound. One can well marvel at the pace the world is making in bringing not only cities together, but making two oceans as one through the sound transmitted by telephone.

"I cannot fairly express my appreciation to Mr. Davey and to the New York Telephone Company for the many favors, not only to myself alone, but toward the company I have the honor to serve."

THE meeting of the Main Society held at the 71st Regiment Armory in New York has been called the most successful of the 166 meetings that have been held during the twenty years of the Society's existence.

With an increase in the membership of 1,761, making a total of more than 4,700, the Executive Committee was confident that the attendance would exceed all previous records. As soon as the doors

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of the Armory were opened at seven o'clock the members began to troop in (which is the only military term applicable to the affair, although it was held in an armory), and at eight o'clock there were 4,000 present, exceeding by about 750 the attendance at the Transcontinental Dinner and Demonstration on May 19.

It was the great success of the May 19 affair which gave the Executive Committee courage to undertake this meeting on October 10, and these two meetings show better than words can describe the great opportunities which are open to the Society and the benefits which may be derived by membership in it.

From the small beginning twenty years ago which Mr. McCulloh told about, the idea has spread all over the country until, as Mr. Marsters stated, membership in the Telephone Societies in the Bell System now numbers nearly 25,000.

Mr. Newman's Report

"REPORTING to your Society as its secretary-treasurer, it is my privilege to say something that I expect modesty will partly prevent being said to-night by Mr. Thorp and the chairmen of the different committees. Beginning soon after the annual meeting last May, the executive committee has met a number of times and worked hard to produce the meeting which we are now holding.

"There has been the closest and most enthusiastic coöperation on the part of the officials of the American Telephone and Telegraph Company, the Western Electric Company and the New York Telephone Company in allowing the necessary employees to devote all the time required, and otherwise; the men who undertook the arrangements have planned and done everything they could think of to make the novel and interesting program a great success, and throughout every department of the three companies the members of the Society have shown a tremendous amount of energy in doing what has been assigned them by the different committees. It would be impossible to tell you the hours that have been spent, both day and night, literally by hundreds of our associates, on this affair. Think of the wiring, the carpentering, the testing, the decorating, the seating, and the crowd that are here to-night, and you do not need me to tell you that they did not 'just happen.' This is the greatest society in the world, and you are here to prove it. What you are going to see after a while will be only a part of the proof.

"The new plan of issuing membership cards and collecting the dues in advance has been a great success, and I wish here to thank the collectors and assistant collectors in all the companies who have helped me clean up the job in such short order. In this and in all of the other things that have been necessary we have had just as enthusiastic assistance from the women of the company—stenographers, clerks, operators—they have been in on it too, and we must not forget them.

"The finances of the Society are in a very excellent condition, as you will hear from the report of the chairman of the Finance Committee.

"The only unfinished business to be presented is the amendment to the by-laws proposed at the last meeting on May 19, as follows:

"RESOLVED: that Article III, Sections 1 and 2, of the By-laws be amended to read as follows:

ARTICLE III

"SECTION 1. The meetings of the Society shall be held during the interval beginning with the first of October of one year and ending with the thirtieth of June the following year.

"SECTION 2. The Executive Committee shall have power to arrange meetings at such times as in its judgment there are matters of interest to be presented to the Society."

Report of the Finance Committee, Mr. Devereux, Chairman

"THE Committee is able to report a satisfactory balance in the Treasury of the Society.

"Through the courtesy of the New York Telephone Company in installing without cost the necessary regular telephone equipment; the assistance of the American Telephone and Telegraph Company by its contribution of the long distance toll lines and the electrical demonstration; and the coöperation of the Western Electric Company in building for us the necessary special equipment and furnishing the loud speaking telephones, the cost of this meeting has been greatly reduced, and we are enabled to carry forward a substantial amount for future activities."

Report of the Membership Committee, Mr. Deas, Chairman

"THE Membership Committee reports the largest number of applications ever received at any one time in the twenty years' history of the Society. We have received and approved, and now submit for consideration 1,761 applications, which is an increase of 56 per cent. and brings the total of membership in the Main Society to over 4,700.

"I move that these 1,761 applicants be unanimously welcomed into active membership in the Society."

A brief summary of the spectacular demonstrations that were given at this meeting follows, but it would be impossible to describe the intense interest they created. The address by Mr. Blackwell was so illuminating that everyone understood exactly what to expect, but this did not diminish the surprise and pleasure at seeing the oscillograph casting the sound waves upon the screen as Mr. Blackwell spoke, or observing the wireless operated, but probably the most intense sensation of wonder was created when the small wireless outfit, with the loud-speaking telephone transmitter attached, was trundled up and down the aisles, allowing the audience to listen to what was being said as it passed by.

The synchronized moving pictures in charge of Mr. G. K. Thompson, the dialogue and music reaching the audience both through the hand receivers and the loud-speaking telephones strung all through the hall, closed a scientific exhibition by Bell System Engineers which, as was predicted, had not been and could not be produced in any other country in the world.

It is also impossible for the Society to express adequate appreciation to these Engineers and all the other forces who contributed of their time and genius through many days and nights to the success of this meeting.

Scientific Demonstrations

AT each of the cities the halls were fitted with an individual receiver for each listener. In addition, at New York there were hung above the heads of the audience about forty so-called "loud speaking" receivers with attached horns. The individual receivers were left on during all the performance; the loud speakers were connected in for parts of the performance, so that any member of the audience could listen either through the individual receivers or to the loud speakers, as he desired. The apparatus used in connection with the individual receivers and loud speakers at New York was mounted partly on the back of the stage in sight of the audience and partly in the space behind the stage.

Local Talking

All the local business of the meeting and the various talks given to the audience were read into transmitters, either from the stage or from a booth adjacent to the moving picture booth.

During the talk on vibrations there were used the following special arrangements:

Applause Record

This was a record made in the recording laboratory of the Edison phonograph people and was made by representatives of the Plant, Traffic, Commercial, and Engineering Departments, and these representatives came from the New York Telephone Company, the Western Electric Company, and the American Telephone and Telegraph Company. At the proper time it was thrown into the receivers by means of a special transmitter arranged to work with a phonograph.

Oscillograph

The ordinary arrangements used in the laboratory for recording telephone wave

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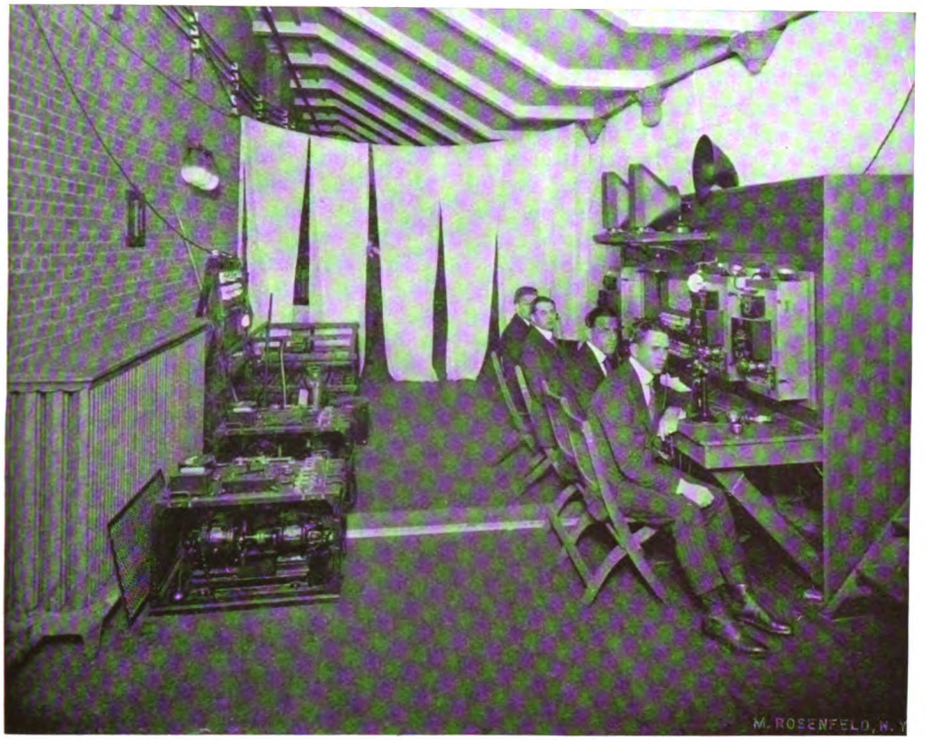

View Taken Behind the Scenes Showing General Control Center and Some of the Special Apparatus for the Electrical Demonstrations

forms are known as "oscillographs." These, however, are too delicate and on too small a scale to show to a large audience. The arrangement used, therefore, was made by taking the parts of a loud speaking receiver, of the type that was hung above the heads of the audience. The arrangement is well described in the talk by Mr. Blackwell, as follows:

Imagine a telephone receiver. Imagine next a small mirror mounted on a stretched wire. Imagine the sender of the diaphragm of the receiver connected to the little mirror by wires so that as the diaphragm vibrates the little mirror vibrates with it. There, in principle, you have the whole device. . .We throw a spot of light from a stereopticon on this mirror and face it so that it falls on the screen, and with proper lenses it makes this spot. Next we connect the receiver of the device in parallel with the circuit which is carrying my voice currents to you. The spot vibrates back and forth as you see. Then to show how the vibrations look as they travel over the line, we make the spot travel rapidly across the screen by means of rotating mirrors. This then shows us a tracing which follows the current vibrations in the circuit carrying my voice to you.

Wireless Arrangements

The antenna used in front of the audience consisted of a number of copper wires stretched between two 25 foot windmill towers.

Connected to this was a wireless telephone outfit which had been made up for experimental purposes and was proper for use for wireless telephony over short distances, such as ten miles.

The movable antenna was made up by taking a small truck of the type used by the Western Electric Company in moving goods around from one part of a floor to another. On this were mounted a couple of bamboo poles with wires stretched vertically. A piece of wire gauze was wrapped around the lower part of the truck to take the place of the ordinary ground connection of a wireless receiving station. On the truck were mounted all the essential parts of a complete wireless receiving station. The high frequency waves, after being detected and amplified, were put through a loud speaking receiver of the same general type as those which hung above the audience.

Another receiving antenna was hung above the heads of the audience at one side, which consisted of a number of wires hung vertically as an antenna with the receiving apparatus mounted in a box. The high frequency waves received by this device, after being detected and amplified, were put through a relay. This closed a circuit which ignited flashlight powder in an ordinary flashlight bag which was hung up in the armory, and also released a trigger which allowed a Blue Bell flag to unfurl, suspended below the flashlight bag.

The movable antenna and the antenna hung above the audience were adjusted to different frequencies so that each could be operated without interfering with the other.

Watch Slide

The watch arrangement thrown on the screen consisted of an Ingersoll watch movement with the case removed and mounted between two glass plates. This was put in the stereopticon in place of the ordinary slide. The tick which was heard in the receivers did not come from this watch, however, but from a cheap alarm clock located near a transmitter connected into the circuit.

Mr. Blackwell's Address on "Vibrations"

GENTLEMEN:—

"DURING the next thirty minutes we will give you a talk and demonstration of vibrations.

"Before getting into our subject, however, I wish to explain that this talk will be given according to the most *modern* method of giving lectures, that is, over the telephone. In this way we give to each one of you an equal opportunity to hear.

"You will not, however, see the speaker. But let me assure you, that you are losing nothing thereby.

"You will, however, need something to fix your eyes on during our talk, so we will try to keep before you throughout the talk some picture or other when there is no demonstration being given to take the place of the speaker you are accustomed to see. So keep your eyes on the screen. For example, we may put this picture on.

(*Weavers of Speech slide*)

"I am sure that most of you rather look at that than at the handsomest lecturer you ever saw.

"Also, before I get into my talk, I wish to give you a bit of confidential information. We did not feel sure as to just how well you would like this talk together with its new method of being presented. We have, therefore, brought right along with us our own applause. Therefore if at the end of this talk you do not properly rise to the occasion, we will just turn on some of our canned applause like this.

(*Applause record*)

I can assure you that that is a good composite telephone yell as it was made by representatives of the Plant, Traffic, Commercial, and Engineering departments, and these representatives came from the New York Telephone Company, the Western Electric Company, and the American Telephone and Telegraph Company.

"Coming now to our subject we will start to tell you about vibrations. You all know, without any special explanation, what we mean by vibrations. When things swing or oscillate or quiver or joggle, we say they are vibrating. Those of you who own Fords know exactly what we mean by vibration.

"Now when a body is vibrating it has a large tendency to set things vibrating

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around it and these in turn set other things vibrating in their vicinity. That is, it sends out traveling vibrations as we might call them. Usually we call these traveling vibrations, waves.

(*Swinging Bell picture*)

"For example, here on the screen is a picture of our old Blue Bell slightly lacking in color, but quite recognizable. We give it a slight push and we have it swinging. This is the simplest sort of vibration. If it were a real bell, the clapper of the bell would bang the sides and would make them vibrate and the neighboring particles of air would take it up and send out air waves that would reach your ears so that you would hear the bell ring something like this. (*Note cracked.*)

"Now, have you ever stopped to consider how vitally important vibrations are in every moment of your life?

(*See-Hear-Feel slide*)

"You see by vibrations, you hear by vibrations, you are warmed by vibrations, you often feel by vibrations as our amateur artist has tried to picture here.

"The beautiful forms and colors which delight your eyes and the beautiful music and speech which entrance your ears are merely complex vibrations which the waves of light and sound bring to you. Without vibrations you would be blind and deaf and dumb. Your contact with your fellow-man and with the beautiful world around you is largely a matter of the vibrations which they send out to you and which you in turn send back to them.

"Now, as telephone men we have a peculiar interest in vibrations. It is our job to arrange so that people can talk to each other however widely they are separated and the way we have of doing it is naturally by means of vibrations.

"You have all a good idea of how this is done: The vibrating voice of the speaker, which are air vibrations, sets the transmitter diaphragm vibrating. This starts the electrical vibrations in the transmitter and these are carried over the wires to the distant point and there they set the diaphragm of the receiver in vibration which sets up air vibrations which are heard by the listening party.

"Let us consider for a moment a section of one of our telephone lines such as this bit out West, of our Transcontinental Line.

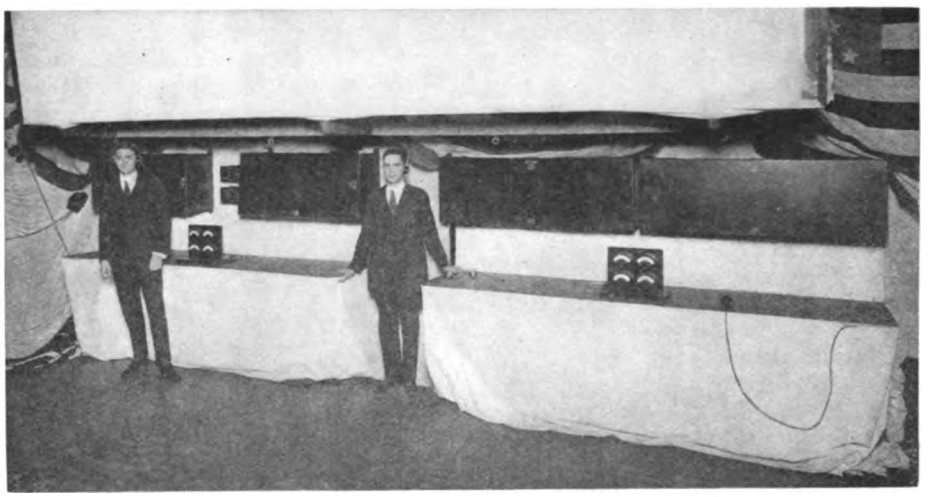
(*Transcontinental Line slide*)

"I wish it were possible in some way for us to see the waves as they go over the wires. The waves are not, as you perhaps have supposed, confined inside of the wires. They are mostly outside of the wires and envelop them and as it were slide along them. These waves, moreover, are of the most complex and beautiful shapes.

"We have arranged on a corner of the stage down here

(*Turn on spot-light*)

an instrument [the oscillograph] by which we hope to give you some idea of what these waves look like. In just a few words the instrument works as follows: Imagine a telephone receiver. Imagine



View of Some of the Special Apparatus Mounted on Stage as Seen from Auditorium

next a small mirror mounted on a stretched wire. Imagine the center of the diaphragm of the receiver connected to the little mirror by wires so that as the diaphragm vibrates, the little mirror vibrates with it. There in principle you have the whole device. Sounds simple, doesn't it? But really it has taken considerable cleverness on the part of some of the Western Electric engineers to make the thing work properly and on sufficient scale to show it to this large audience this evening.

"Next, we throw a spot of light from a stereopticon on this mirror and face it so that it falls on the screen and with proper lenses it makes this spot.

(*Throw on light*)

"Next, we connect the receiver of the device in parallel with the circuit which is carrying my voice currents to you.

(*Connect in*)

"The spot vibrates back and forth as you see. Then to show how the vibrations look as they travel over the line we make the spot travel rapidly across the screen by means of rotating mirrors.

(*Rotate*)

"This then shows us a tracing which follows the current vibrations in the circuit carrying my voice to you.

"I will now have some sounds made and will then speak some words and you can both hear and see the vibrations which form them.

"First, we will show what we would call a nearly pure sine wave of 800 vibrations per second. This is about the average frequency of the human voice.

"Next, we will show a 400 vibration per second wave with some 800 cycle in it. This makes a wave somewhat complex, yet sufficiently simple for you to clearly see the form.

"I will now make a number of vowel sounds at different pitches and speak a number of words: '*a, e, i, o, u.*' '*The Telephone Society of New York is now assembled.*'

"Now, as the last words on the screen, we will give you the outline of two wonderfully powerful words, "Bell System."

"Instruments constructed on a similar principle but made to show on a small scale and with much greater refinement such electrical vibrations, comprise one of our most powerful tools for use in investigating just what takes place in telephone and telegraph circuits. In this work we have the spot of light make a tracing on a photographic film. Here are parts of such films.

(*Oscillogram slide*)

"The top is from the word 'America,' the lower is from the word 'Bell.' By proper methods these tracings can be analyzed into their components and we can find just what goes to make up the word. The waves are somewhat crowded in this particular picture to get a large number on the slide. They would, perhaps, look even better if stretched out more.

"I hope at least you have gotten some faint idea of the beauty and complexity of the waves which go out over our wires. Why, if it were possible for men to see such waves we would find the country people all along our lines sitting out in groups on warm summer evenings watching the beautiful telephone waves roll by.

"So far we have shown you the kind of vibrations and waves used in ordinary telephony. Somewhat recently, however, there has been added to the tele-

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phone family of vibrations, a new member. I have the pleasure now, therefore, of introducing to you the very high frequency vibrations and waves used in wireless telephony and telegraphy.

"These wireless vibrations are very much faster vibrations. They are from fifty to a thousand or even more times as fast. We cannot, therefore, show them to you with the spot of light on the screen. The little mirror couldn't begin to dance around fast enough. We will, however, demonstrate them to you through some of their peculiar characteristics.

"In the front of the hall you will see a small size wireless antenna.

(*Spot-light on*)

"Antennæ are so common around the country these days that everybody is familiar with them. Why, I believe many a city boy learns to recognize them long before he knows a cow by sight.

"Before starting the demonstrations with the antenna, I wish to give you just a few words as to how the wireless telephone works so you will better appreciate what we are trying to show you.

"In a wireless telephone connection the talking might be done from any regular Bell substation. The voice currents would then go over our regular lines to the wireless station, which might look, for example, like this Government station at Arlington,

(*Arlington slide*)

which as you know was the station from which the wireless telephony was done to San Francisco and Paris and Honolulu.

"In a station for sending wireless we would find apparatus for generating high frequency electrical vibrations, apparatus for controlling them, amplifying apparatus and the towers for sending out the waves.

"For wireless *telegraphy* (which is, of course, older than the wireless telephone) the method of generating the high frequencies which in the past has been most used, is the spark method.

(*Turn on spark "Hello" in Morse*)

"This method in principle is very similar to taking a bell and giving it a rapid succession of hits in order to get vibrations, except that in the wireless case they take an electrical circuit and give it an electrical hit and it vibrates and gives out the high frequencies desired. The spark is the method of electrically hitting the circuit.

"For wireless telephony, however, this method of generating is entirely too crude. In fact, we brought this spark coil here not to use at all in our demonstrations, but just because we knew that at least nine men out of ten when you speak to them of wireless think of the zip, zip, zip and the flash of the spark. So not to disappoint them we brought it along with us. It has, however, no connection at all with our wireless set up. So we will give you a few more zips out of it just to please your ears, and then go on with the modern method of wireless.

(*Turn on sparks, Morse Code*)

"Two general principles are most often used in generating the high frequencies for the modern wireless telephony and telegraphy. In one, the high frequency is generated by revolving machines in somewhat the same way that power currents are generated. In the other, they are generated in a way which is similar in principle to the vibrations which are set up when you hold a receiver of an ordinary telephone substation set in front of the transmitter, and it howls, as we say. Only in wireless they arrange that it howls at a very much higher frequency.

"The voice currents then which are carried over the wires to the wireless station, as we said, are made in modulating apparatus to so control the high frequency currents that the amount of current sent into the antenna corresponds exactly in amount to the variations in the amount of the voice currents.

"This modulated high frequency current must then be thrown out into space. This requires, as it were, that arrangements be made so we can take hold of a whole lot of space. Therefore, big towers reaching up into space are put up such as these at Arlington.

(*Arlington slide*)

"And now we come to one of the most important of the peculiarities of these high frequencies, and that is, that while ordinary frequencies will very easily stay in the wire circuits which we string for them, these high frequencies very easily leave some kinds of wire circuits and go out into space. It is this peculiarity which has made transmission without wires possible and has excited the great interest in them.

"These waves then rush out in all directions from the towers. At the distant point, perhaps thousands of miles away, such as this Government station near San Francisco,

(*Mare Island slide*)

a very minute fraction impinge on the receiving antenna. The minute waves thus gathered out of space are then put through a detecting device, which smooths out the high frequency waves and leaves just the voice currents. These properly amplified, can then be carried over our regular lines to the ear of the one to whom the speech is being sent.

"Now you will see that in wireless we have a very peculiar condition in that our message instead of being sent just to one point along a carefully prepared circuit as with ordinary telephony, is sent out equally in all directions, or perhaps in some cases with a small directive tendency. That is the wireless antennæ dotted all over the country may, as it were, all be hollering at the same time and each at the top of its voice. The receiving station, therefore, some way must pick out its own message from the others. This brings in another very important principle on which wireless works and which we will demonstrate to you later. We can call this selectivity.

"This selectivity is accomplished by having stations which would interfere with each other use different high frequencies. That is, one station might use a current of 50,000 vibrations in a second, and another station use a current of 100,000 vibrations in a second.

"The receiving station then is tuned, as we call it, to receive very well that frequency destined to it and to receive very poorly all other frequencies. And so it hears its own message with the others cut out as well as possible.

"Now then, keep in mind that the two things we wish to demonstrate to you are, first, transmission without wires, and second, selectivity. To do this we have as a sending station the antenna in front of you.

(*Spot-light*)

"As receiving stations we have two devices. One is hung above your heads from the roof girders.

(*Throw on spot-light*)

"The other we have mounted on a small truck as you see here.

(*Bring forward truck*)

"Both of these have all the elements of a complete receiving station. They are, however, adjusted to respond to different tunes.

"First we will use that tune to which the movable antenna responds. You will note that there is a horn hung in the antenna. In a minute, I will have the circuit carrying my voice disconnected from the receivers around the room and connected to the wireless apparatus associated with the antenna at the end the room. The high frequency waves will then go through the air to the movable antenna and those in the vicinity will hear my voice coming from it.

(*Movable antenna demonstrated*)

"All this time the little antenna above your heads has been quiet because we have not been using the special frequency to which it is tuned. In a minute, however, I am going to touch a small key near my hand which will send out the special frequency to which the little antenna answers, and if it is in proper shape it ought to show some signs of activity. All right, then, watch it. Here we go, one, two, three, go.

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(*Push on key; flashlight bag explodes and bag drops*)

"In conclusion, just a few words of comparison between the low frequency vibrations with wire telephony and the high frequency vibrations with wireless telephony. In the wire telephony we have as you know an elaborate system of separate paths for the waves set up by our lines and cables, and an elaborate system of switchboards for connecting these paths together. When two men wish to talk to each other we set up a complete wire path between them and this path which may be thousands of miles long is carefully balanced so that other people will not overhear and so the connection will be quiet and is carefully designed to have the right efficiency. With wireless, however, there are no definite paths. The waves are spread over a big territory and only a very minute part reach the receiving station, while some of the rest perhaps, is being received by stations which we do not wish to receive them, and perhaps is interfering with other wireless messages because selectivity will only take care of a comparatively small number of messages. It is this lack of definiteness and balance and reliability which so greatly limits the use of wireless communication.

"Now, gentlemen,our time is about up, as you can see from my watch, and so we will close this part of the demonstration.

(*Watch slide*)

"We have a talking movie which we will show you in a minute."

AT the conclusion of the program a baseball game was played through the courtesy of the Life Like Baseball Player Corporation. The date was one on which the Brooklyn and Boston teams were playing for the world's championship, but instead of reproducing the game that day, an intercontinental contest was displayed, an outline of which is printed below.

In introducing the baseball game, Mr. Wm. Homan paid a high tribute to the telephone, from which we quote as follows:

Tribute from Mr. Homan

"How fleet is a glance of the mind!
Compared with the speed of its flight,
The tempest itself lags behind
And the swift-wingèd arrows of light.

"SINCE the poet so beautifully framed that thought, God inspired Alexander Graham Bell to invent the telephone which makes of the human voice a companion to the glance of the mind and enables them to travel hand in hand to the uttermost parts of the earth.

"The telephone stands outlined against the horizon of the ages and towers like a mountain-peak above every other invention of man; and you, gentlemen, may well be proud of your profession which makes every one engaged in the telephone industry a benefactor of mankind."

How the Heavy Artillery Won the Intercontinental League Game and Clinched the Title

Both Pitchers Hurl Exceptional Ball Until President Vail's Home Run Gives the Championship to the Heavy Artillery

CARTY'S WORLD PLAYGROUND, Tuesday, October 10.—The Heavy Artillery are the telephonic champions of all the planets. Before the largest crowd that ever attended a Telephone Society Meeting a team composed of the officials of the American Telephone and Telegraph Company, the New York Telephone Company, and the Western Electric Company defeated the Mosquito Fleet composed of the Executive Committee of the Telephone Society of New York in a last inning rally such as baseball history may well pride itself upon.

With the score against them of 4 to 1 and with 2 out and 3 men on bases, President Theodore N. Vail, batting for Ford Huntington, hit the ball after two strikes and three balls had been called on him, sending the sphere whirling through space—and when last seen it was measuring the space traversed by the wireless on its wild flight to Honolulu. The game inning by inning is as follows:

FIRST INNING

Devereux singled to right. Newman hit first ball to short stop double play—Bethell to Marsters to Bethell—Deas out Thayer to Bethell. No runs.

Bethell bunted along first base line, Salt walked, Kingsbury sacrificed to Deas—Bethell taking third, and Salt second—Thayer walked. Bethell singled scoring Bethell—Carty out on strikes. Marsters hit to Boggs. One run.

SECOND INNING

Craft walked on four straight pitched balls. Congdon flied to deep center, Craft taking second. Boggs bunted along third base line. Craft taking third. Craft and Boggs worked delayed steal, Craft scoring. Blackwell had first strike called when Huntington threw to Thayer, catching Boggs stealing third. Blackwell out, Thayer to Bethell. One run.

Huntington out, Boggs to Newman, Thurber fanned. Bethell singled to right field. Salt hit to Boggs. No runs.

THIRD INNING

Thorp beat out infield hit after two strikes were called. Casler walked, Devereux doubled to right field, Thorp and Casler scoring. Newman beat out infield hit. Deas walked. Craft hit to third—triple play—Thayer to Bethell to Bethell—2 runs.

Kingsbury singled. Thayer flied to third. Kingsbury died stealing. Bethell flied to Devereux.

FOURTH INNING

Congdon singled and reached second on Salt's error. Boggs hit to Bethell who touched Congdon doubling up Boggs. Blackwell out Marsters to Bethell.

Carty singled. Marsters walked. Huntington walked. Thurber out Congdon to Newman. Bethell out Deas to Newman. Salt out Deas to Newman.

FIFTH INNING

Thorp singled to left field. Casler out on three pitched balls. Devereux tripled to right scoring Thorp. Newman hit to pitcher and Devereux was run down between third and home. Newman died stealing second after first ball was pitched to Deas. One run.

Kingsbury flied to right field. Thayer hit to short and was thrown out. Bethell walked. Carty singled to right field. Marsters singled to left field. Bases full and two out. T. N. Vail was called upon to pinch-hit for Huntington. Strike—strike—ball—ball—ball. Home run.

The game was called on account of lost ball traveling in the direction of Honolulu.

HEAVY ARTILLERY

		A.B.	R.	H.	P.O.	A.	E.
Bethell, U. N.	1st B	3	1	2	5	..	..
Salt, A. L.	LF	2	..	..	..	..	1
Kingsbury, N. C.	RF	3	..	1	..	1	..
Thayer, H. B.	3d B	2	..	..	3	2	..
Bethell, F. H.	SS	2	1	1	3	3	..
Carty, J. J.	CF	3	1	2	1	..	..
Marsters, A.	2d B	2	1	1	2	1	..
Huntington, F.	C	1	..	..	1	2	..
Thurber, H. F.	P	2	..	..	..	..	..
Vail, T. N.		1	1	1	..	..	..
		21	5	8	15	9	1

MOSQUITO FLEET

		A.B.	R.	H.	P.O.	A.	E.
Devereux, F. L.	CF	3	..	3	1	..	..
Newman, J. D.	1st B	3	..	1	5	..	..
Deas, A. W.	2d B	1	..	..	2	2	..
Craft, E. B.	RF	1	1	..	1	..	..
Congdon, F. E.	3d B	2	..	1	1	1	..
Boggs, R. H.	SS	2	..	1	2	1	..
Blackwell, O. B.	LF	2	..	..	..	..	..
Thorp, I. J.	C	2	2	2	1	1	..
Casler, H. W.	P	1	1	..	1	..	..
		17	4	8	14*	5	..

						Total
Mosquito Fleet	0	1	2	0	1	4
Heavy Artillery	1	0	0	0	4	5

*NOTE: Two out when winning run was scored.

Umpires: Behind bat, J. L. Swayze; Bases, R. S. Scarburgh. R. F. Foul Line, J. D. Ellsworth; L. F. Foul Line, P. L. Thomson.

The board on which the game was played represented a baseball diamond. The opposing teams wore different colored uniforms, and all the actions of the different players were made to appear with great realism, and by an ingenious device a small spot of light thrown on the board from the front represented the ball. A large portion of the audience which remained during the social hour and witnessed it were greatly amused and entertained by the game.

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Clearing Trouble on 2800

By Dorothy Thorne

A BRAID of wilful, fluffy hair started the trouble. Twice it had become entangled in the arithmetic problem its small owner toiled over, and now it had been tossed wrathfully back over the blue gingham shoulder and lay like a serpent of temptation across the desk of Tommy Taplin, who sat behind. Adventurous spirit and agile fingers were attracted simultaneously, and in a moment the large plaid bow which had adorned the braid was nowhere to be seen. Tommy's friends in the back seats made no secret of their approval—until the teacher noticed, and summarily removed Tommy from among his admirers, banishing him to a desk entirely surrounded by girls. Here the plot thickened, for Tommy was one of those, foreordained to success, who make opportunities from every environment. A cerise bow which terminated a stubby blond braid just in front of him was artfully, if not artistically, superseded by the plaid ribbon, disinterred from an abysmal pocket. Tommy had taken simply what the fates had sent him, but now he saw a triumphal climax to be attained. So he shattered all records for good behavior, and in half an hour was returned to his own seat, where he soon tied the cerise bow on the fluffy braid.

At recess Rita, the unknowing blonde, saw across the school yard a cerise ribbon identical with her own distingué spring sensation.

The blue plaid ribbon on the blond braid had not escaped the notice of its rightful though unconscious owner, who had decided rather fiercely that even hair ribbons sent by Aunt Estelle from the city were never sure to be exclusive.

"Copy cat." The blonde threw down the gauntlet.

"Copy cat yourself." Polly, the curly-haired, picked it up with vehemence.

The battle waged fiercely.

"I should think 'twould hurt your eyes to wear a cerise ribbon with that red dress, even with the bow behind your back; it hurts everybody else's that has to see it."

"Who's got cerise ribbon?" Polly swung her braid around to disprove the accusation—the truth dawned—and Tommy Taplin's dexterously reared structure tumbled in ruins.

The two hitherto embattled floods of passion united now in one relentless stream against the perpetrator of this double outrage. Firm was the alliance that was formed and deep the plots that were laid to compass his destruction.

But never in that school was the expiation of his sin accomplished. Not even four years later when the good opinion of one of the avengers became a matter of supreme importance to the now glorious Taplin. For one whole season, from the first kick-off in October to the last home run in June his subjection to the charms of the fluffy tresses was complete, but not even the laurels of the season's hero, worshipped of the entire school, could quite obliterate the bitter memory of the misappropriated hair ribbons.

THE wavy locks of Pauline O'Neill were gathered now in a soft-radiant mass at the back of her head, but they were not entirely out of harm's way even yet. Every now and then one uncontrollable curl or two would still escape bounds.

As she left her position at the big switchboard of a busy downtown exchange she was detained by the Chief Operator. After ten minutes' conversation on the dangers of a hasty disposition in handling the "misunderstandments" of a certain branch exchange attendant, Pauline O'Neill found herself walking down Broadway with fiery cheeks and the realization that her job depended on her ability to control not only herself but people she had never seen—notably the erratic attendant at 2800. She believed Main 2800 was the most troublesome line in the whole city—she knew it was in her office. There was a compensating tinge of pride that it had been given her at all. And the Chief had understood. Polly knew she had understood the whole thing straight. That was the one bit of solid ground under her feet as she was dashed about in the maze of her hot, surging thoughts.

"Attendants are our biggest subscribers . . . on them depends our service to every one on their boards . . . no matter if they demolish every rule of good operating, remember 'the customer is always right' . . . we have to please them in spite of themselves" . . . Fragments of the Chief Operator's words kept going off like firecrackers in Polly's heated brain. It was impossible when attendants wouldn't come half way. But others had achieved the impossible, she guessed Polly O'Neill could.

"If you aren't Polly O'Neill, I never was Tom Taplin."

As the sound of her name penetrated the surge and whirl of her thoughts, Polly looked up and stood perfectly still, to the vast inconvenience of the hurrying throng. For a full minute she looked steadily at the young man who had spoken, while her mind bridged a gap of ten years and found a face that tallied with the one before her.

"You're right," she said at last, "but how did you ever dare to risk it?"

"Well, I had good reason to remember that hair, you know." A familiar flash—half impish glee, half repentance, gleamed for an instant as he fell into step beside her.

They filled in the ten years with ten blocks of conversation such as Broadway's joggling crowd would permit, exchanging what bits of news they had of the little suburban school.

"I've heard that Rita is somewhere here in the city," said Polly, and they laughed at the memory of the hair ribbons. "I'd like to see her again, but I've never been able to find her."

If Polly had been noticing she would have seen a sudden mischievous twinkle flicker in Taplin's eyes, but his voice was nonchalant as he said, "I've met her once or twice. She's downtown here somewhere I believe," and then, as if in self defense against her allusion to his boyish prank, he told of the work he was doing now. He, too, had become one of the "Bell family." He was a salesman, and he told her with pride of the first big contract he had won, of the months of expert "handling," and of the imposing stature of the victory.

Polly learned three things before he finished: That winning a P.B.X. contract was a bigger thing than she had ever realized; that the deftness and agility of the youthful Tommy's fingers had been transmuted into the tools of the mature Taplin, the deftness of his tongue and his ability to deal with human nature; and that he pleased people whether they wanted to be pleased or not.

"And you know it was three years ago I nailed that contract," he was telling her, "and now I'm busy over the same concern again. They need a much larger system. We've been trying to bring them to see light on it, but they're slow.

"Say, I'd like to take you in and show you that bank." He was frankly delighted with his idea. "It's a wonderful place. You can stand on the balcony and see the whole thing laid out like a map under you. It's only a step from here. Come on."

When they reached their perch under the great rotunda, Polly looked down on the most wonderful sight she had ever seen outside of a central office. The enormous floor space was divided into private offices, banking rooms, clerical offices, aisles, waiting rooms, and conference rooms—innumerable apartments, some like a beehive full of clerks and customers, some with a single occupant. Everywhere she could see telephones at work. Groups of two or

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three men would confer, then one would lift his receiver and, the difficulty unraveled, each would go on with his work.

It was an enormous business organism pulsing below her, in the height of its stupendous activity—at the peak of its giant load. She gazed at it fascinated.

It was the reverse side of a few square inches of her switchboard—an almost infinitesimal part. She saw at last the magnitude of her own work.

Pauline broke the long silence. "This must be in our district. Do you know the number?"

"That's so. Yes, it's Main 2800."

ON their way out, Taplin suggested they stop to look at the switchboard and equipment. Polly knew that meant meeting the attendant—the girl whose carelessness had so far proved her Waterloo, and Polly had no desire to see her. She hesitated, but Taplin seemed particularly eager, so she assented heartily. Her cheerfulness seemed to react on herself, for in a few minutes, thinking again of the view she had seen from the balcony, of the great pulsing organism whose tremendous nervous energy flowed through the narrow gateway of that attendant's hands and her own into the whole outside world, she realized that perhaps after all it would be good for her to know that girl.

As they entered the room, a young woman came in by an opposite door and prepared to relieve the attendant at the switchboard. Taplin made no move to state his errand, but strolled toward the board, keeping an expectant eye on Polly's face. Polly wondered, but she followed him toward the board.

A shaft of sunlight slanted across the blond head of the girl who sat there, and shone brightly on the tight braid that crowned the mass of her pale, light hair. A straggling ray touched the cerise bow at her neck.

She glanced up to nod a brief "Good afternoon" to Taplin, and a cry of surprise broke from Polly's lips as she saw that it was Rita, the sworn ally of her youthful conspiracies against that boyish individual who now stood laughing gleefully at the success of his latest plot.

Polly was genuinely delighted, and when the rush of the surprise and greeting had subsided and she found that Taplin had seen Rita on his previous trips to study the equipment, and had been planning the meeting since her first mention of Rita's name that afternoon, she observed with a twinkle that this ought to cancel his heavy account for the hair ribbons and square his record. Rita agreed merrily and they talked of old times and of the trick of fate that had brought them into different sides of the same work. Then Rita showed them her board.

"It isn't large enough now," she said, "the bank has grown so, but the men upstairs do not realize at all how impossible it is to give service without the equipment."

"I'll convince them of it yet," Taplin answered, and he described the larger board he saw was needed there.

"You would need three operators at the board most of the time and you would have to take charge of the whole thing. It would be a good thing for you."

"It would in more ways than one. I'm used to having plenty of equipment and I get so muddled now when the calls come in fast I do the wrong thing sometimes. They never know it's because the facilities are so limited and I haven't inventive genius enough to make wires do three times the work they're designed to. Then I get things twisted and everybody gets cross. I'll be thankful if you do convince them!"

Rita was good natured about it, but Polly could see it troubled her. A strange conflict and readjustment had been going on in Polly's mind, as she tried to grasp the fact that the "troublesome" attendant at 2800 was Rita, always before her ally, since that first swift discovery of their mutual debt of vengeance to Tommy Taplin.

She walked with Rita to the board and told her two or three things which her own operating experience had taught her would be helpful, and they talked in a quiet, friendly way about the work. Rita explained some of her difficulties, and soon it was the old chummy "pulling together," as it had been when nothing sterner than vengeance for interchanged hair ribbons had been the object.

Polly suggested lightly, as they turned toward Taplin, "I suppose *we* can help convince them they need that new board if we have no difficulties except with the lack of equipment, so that will stand out so clearly they can't help seeing." Then, with a laugh, "Do you think we'd feel too unnatural, Rita, being allies *with* Mr. Taplin, instead of against him?"

"Fine," said Taplin. "Miss Rita will get a promotion and I'll get a big contract, but what will you get out of it?"

"Oh, maybe I'll win a record."

They fooled a good deal over Polly's suggestion before they parted that day, but the weeks which followed proved that the girls at least had not forgotten it. There were fewer tangles on the lines of 2800, and when there was one, the main idea was not to fix the blame but to straighten out the service.

One day as Polly left the board the Chief Operator met her with a letter in her hand, and her eyes were shining. "Twenty-eight hundred has a new board, and ten more trunks," she said.

"We've *won*, we've won, we've won," sang itself through Polly's mind, over and over, so that she had not a word to say aloud. The Chief Operator handed her the letter. It was the kind that begins to key up an office with healthy pride five minutes after it is received, and it made Polly turn pink under the Chief's smile of genuine congratulation.

"Now that that line is conquered we'll have a chance to be the record office next month," the Chief was saying.

Polly in her embarrassment tried to imprison a wilful curl.

"I've been noticing for some time," the Chief Operator was laughing now, "That it is only a *curl* that ever gets out of bounds now."

And Polly, for sheer happiness, turned and rushed away.

WHEN Polly and Tom Taplin met that evening—in Polly's front parlor—it was not by accident, and it was not the first time in ten years—nor ten days.

"Congratulations, I heard to-day that you've won your big contract," was Polly's greeting.

"Not yet. That's not the big one now." Tom's voice was very low and determined, and his eyes wore the quizzical expression that had made Polly fence many times during the past few weeks. So she paid no attention, but hurried on and told him of the Chief's words and how 2800 was a good line at last.

"It was seeing her side that did it—that day we were down at the bank. I never really appreciated what the P. B. X. girls had to handle—you know you never do *really* catch on to a thing by being *told*. But seeing it all certainly opened my eyes. And it opened hers, too, when I showed her how things she thought were awfully little, like using the highest numbered trunk first, and acknowledging the "A" operator's repetition, made a lot of difference to us. So 2800 is cleared up at last and it was the worst in the office."

Polly started to strike a few jubilant chords on the piano by way of celebration, but in the midst of a flourishing trill her hands were lifted willy-nilly from the keys and brought gently behind her.

"So you never do really catch on to anything by being told," Tom was speaking very earnestly, but she did not turn. "Well, that's true, I never could catch on to why you've kept insisting you must stick to your work till you'd won out over that bad line. But you've done it and shown me. And now isn't it time for you to let me *show* you my side of that question—so you'll really catch on?"

And Polly, partly because she was gently pulled around, partly for sheer happiness, turned—and *didn't* rush away.

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Electricity

The Statue on the Tower of the New Telephone and Telegraph Building

By Dorothy Thorne

Miss Evelyn Beatrice Longman, the Sculptor

THE great statue of "Electricity," designed for the Fulton street tower of the Telephone and Telegraph Building at 195 Broadway, was raised to the roof of the building on October 24 to be swung into place on the pinnacle of the tower.

The statue, modelled by Miss Evelyn Beatrice Longman of New York, was the successful design in a competition in which eight sculptors participated and of which the judges were Mr. Theo. N. Vail, Mr. Daniel Chester French, the famous sculptor, and Mr. William Welles Bosworth, the architect of the building. Whatever may have been the artistic or technical considerations which may have determined the superiority of Miss Longman's design, Bell System employees will feel as they study the figure, that nothing could more truly or more idealistically have embodied the genius of the thing that is their work than does Miss Longman's superb conception. The statue shows a heroic winged figure poised upon the globe, with one powerful arm reaching into the sky and grasping the darting bolts of electricity. In the other hand, drawn back and away from the body, he holds the open end of a lead sheath cable, from which spring, instead of insulated wires, the swift symbols of its power—electric energy. Great coils of the cable are supported in the crook of the arm and wind across in front of the body and back to earth behind the feet of the statue.

The sense of speed emanating from the whole statue—from the lightning bolts, from the long swing of the cable, the straight, alert posture of the body and from the mighty sweeping wings, themselves the very symbols of speed, is yet constantly tempered by the strength, calmness, and control which every line expresses. The figure is stretched to its full height, heels raised until only the ball of the foot holds the ground, but the strong, taut muscles of leg, ankle, and foot, the superb balance and poise, give an unshakable security and firmness to the figure, a stability which combines in exquisite subtlety and truth with its wind-vanquishing speed.

Not only the speed of electricity do the great wings suggest, but the intangible, mysterious element, and perhaps, too, they bespeak the kinship between the ancient god "Mercury" and "Electricity," his heir, the modern "Messenger."

"ELECTRICITY"
Evelyn Beatrice Longman, Sculptor

The statue is of bronze and will be covered with gold leaf, as the natural bronze becomes blackened when exposed to the weather, so that it would not be practicable for the purposes of this statue. The figure is 24 feet in height, weighs 16 tons, and stands 434 feet above the street. Raising it to the roof of the building—past 26 stories full of busy workers at the *fact*, who became eager spectators of the symbol of the upward progress of "Electricity"—was a momentous business. At every cornice a man was stationed to guide it away from the jutting edge, if it should be necessary, until at last the huge mass swung above the last cornice, at the edge of the roof, and the first and most difficult stage of its journey to the tower was over.

On the roof at 15 Dey street stood a little woman whose fine, dark eyes were watching the consummation of nearly a year's work, work too, which had been extended over twice twelve months, and more. It was Miss Longman, the creator of the statue.

Very little about the inspiration which had prompted the statue, very little about the idea behind it, would Miss Longman say, more than that she had intended to express the power of electricity, its service to mankind, and the intangibility and mystery of its nature. And after all what need for a verbal explanation, when every line and contour of the statue itself is eloquent? What was the artist's thought and inspiration had been expressed once in all its fullness, and after that, even when that expression hung nearly four hundred feet in air, encased in huge protecting beams, words were superfluous and inadequate.

Of the technical side, the artist was more ready to speak, and the considerations of height and mass, of the effect of distance—for the great figure will be seen only from a distance—which had had determining influence upon the proportions of the statue, showed how much of science as well as of pure art, the artist must command. The first model of the statue—about one-eighth the ultimate size—which was submitted for the competition, was accompanied by a small model of the tower with the proposed statue in place, showing the exact relative size of the figure and the tower it is to crown.

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"The Spoken Word"

Addresses Delivered at University of State of New York in Albany from California and New York City

AT the 52d Convocation of the University of the State of New York held in Albany on October 20, the evening session was devoted to the general subject of "The Spoken Word." There were present some one thousand or more prominent men and women, most of them educators, from all over the State.

One of the results of the meeting was to bring home to the educators the achievements of the Telephone Company. Dr. John H. Finley, President of the University of the State of New York and Commissioner of Education of the State of New York, presided.

Every seat of the auditorium of the State Educational Building had been equipped with an individual telephone receiver and brief talks were delivered to the audience by Chancellor Sexton at Palmyra, Governor Whitman at Troy, President Benjamin I. Wheeler at Berkeley, Cal., and President Theodore N. Vail at New York City.

During the evening, Dr. Finley, as President of the University, called up Mr. Thomas A. Edison at Orange, N. J., and conferred upon him by telephone the honorary degree, Doctor of Laws.

With Mr. Edison in Orange were his wife, daughter and son, and a group of friends, and after the degree had been conferred and Mr. Edison had expressed his thanks, Mrs. Edison said to Dr. Finley that the Honolulu musicians were present and she asked if the audience in Albany would like to hear them. Upon receiving a hearty affirmative, the musicians began a most beautiful selection, which was heard 200 miles away.

Addresses on "The Spoken Word" were delivered by John M. Clamp, M.A., Secretary of the American Speech League, John J. Chapman, Dr. John J. Carty, Chief Engineer, American Telephone and Telegraph Company, Mrs. August Belmont, and Mr. Thomas A. Watson. Mrs. Belmont said in part:

> No finite power is greater than that of the "spoken word." It is like the wind upon the ocean of our emotions. But herein lies its weakness—it allows of as many interpretations as there are persons.
>
> They say the "pen is mightier than the sword." But the "spoken word" has the might of the pen and the added force of the speaker's personality. Herein lies its strength.
>
> The English language suffers very seriously from the slovenly manner in which it is spoken. We hear much of phonetic spelling, but alas for the English language if the phonetics indulged in by some should become the language of all.

Miss Mathews Sustains the Bell Tradition

MISS BELLE MATHEWS, agency operator at Jamesburg, N. J., displayed the courage and coolness of the sort which makes the fine Bell Service tradition, on October 10 when the central office was entirely destroyed by fire. Our Jamesburg switchboard is a one-position magneto board and Miss Mathews, the daughter of the agent, is the regular operator.

The fire started on the first floor of the building in which our office was situated, directly under the operating room. Miss Mathews called the fire department and remained at her board for several minutes after the flames had reached the operating room itself. When it finally became imperative that she leave the office she did not leave her responsibility behind her, but went at once to telegraph district headquarters at Asbury Park, and the fire departments of Freehold, Hightstown, and Englishtown. These fire companies rendered great assistance in fighting the fire, which in spite of their efforts damaged two adjacent buildings and threatened the entire business section of the town.

Immediately upon receipt of the news from Jamesburg, district headquarters notified division headquarters at Newark, and long before the flames were subdued a new switchboard from New York, and cable and other miscellaneous material from Newark, were on their way to Jamesburg on automobile trucks of the Company. New information records, rate sheets, designation card markers, and similar supplies were secured from the Freehold central office, and while the equipment for the new office was in transit, new quarters were being sought near the devastated area. The second floor of a two story building in the same block with the former office was leased, and the new cable was run at once from the central office pole to the new ffice. Carpenters had meanwhile arrived from Newark, and they now placed the backboard in the front room to mark the terminal equipment.

Cables were installed between the terminal equipment and the switchboard and between the fuses and the terminal equipment, and immediately after the cables were installed the test splice connecting the outside cable to the fuse rack was made. The cross connection, placing of heat coils, carbons and fuses followed, and by 11.45 P.M. the trunk lines were in service. At 1.30 A.M. all subscribers were back in service, and so far as the subscribers were concerned the fire might never have occurred, except for the fuller knowledge and appreciation they had gained of what Bell service and Bell spirit can do.

Winning Words

JOHN E. HAZZARD, of Broadway laugh-making fame, or the librettists of "Miss Springtime," one of the newest musical comedies, have borrowed "The Voice with the Smile Wins" from us for a line in the show. The line does win, as it suggests, and brings a good laugh from the house.

Hazzard is doing a village-drug-clerk part for a few minutes to help along the comedy when a chipper little chorus maiden "disguised" as villager walks into the store in a vur'vur' agressive manner and irately demands attention.

The blithsome Hazzard quickly steps forward, faces the angry customer and says, "Ah, remember, madam, the voice with the smile wins." The lady smiles, the comedian laughs, and the audience laughs with him.

And the village where all this occurs is one of those in musical comedyland in the heart of the Balkans.

C. H. SPEAKS, *Advertising Department.*

Marriage by Telephone

ANOTHER wedding by telephone is reported in the newspapers. Mr. Arthur Brugger of Havre, Mont., and Miss Hattie Hudnut of Portland, Ore., are said to have been married by telephone, the ceremony being performed by the Rev. Prentiss H. Case of Havre. Mr. Brugger stood beside the clergyman, and Miss Hudnut at the other end of the wire stood in the midst of her family circle.

Last month we reported how a courtship of many years' standing was consummated in an engagement by telephone, and such instances as these show how marvelously well the telephone is adapted to accomplish the hitherto impossible.

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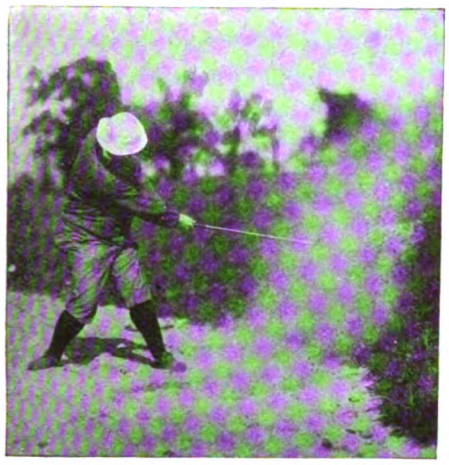
Western Division Golf Tournament

A THREE-cornered tie between representatives of the Commercial, Plant, and Traffic departments was the result of the second annual 36-hole golf tournament of the Western Division, held on Columbus Day, October 12. Through the courtesy of Messrs. J. J. Welch and V. H. Baethig the tournament was played over the Park Club Links, at Buffalo.



L. D. Brainard Getting Out of Trouble

C. H. Thomas writes: "The day was ideal for playing and the way some of the duffers tore up the turf in order to beat General Bogey was a sight sufficient to bring tears out of the most hardened never-keep-off-the-grass stickler.

"No one will ever be able to tell why Mr. W. J. O'Hea, district manager, Rochester, Mr. J. J. Welch, division superintendent of traffic, and Mr. V. H. Baethig, department of Buildings and Supplies, should have gotten together and divided the bacon, with scores of equal size. Baethig, whose A.M. score was low gross for the day, was unaware of his good fortune until his Boss rechecked his A.M. card and found that the winner was a mighty poor mathematician.

"Brainard of Dunkirk showed evidence during the early part of the match of a fondness for the bunkers and even went so far as to have his picture taken in the act of rescuing his pill from the sand."

Mr. Thomas finishes his account with this paragraph:

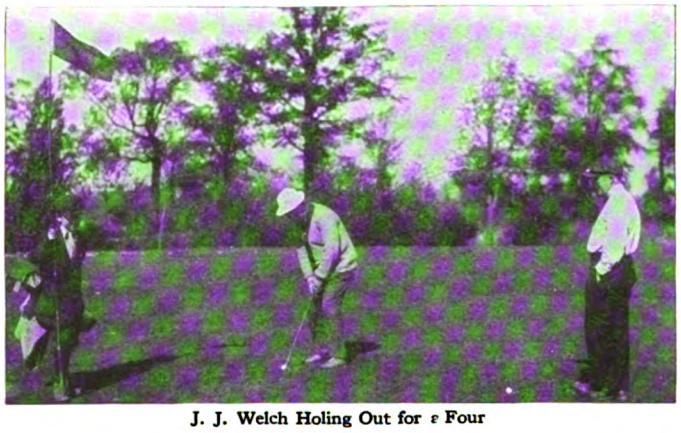
"PLEASE READ THIS PARAGRAPH VERY CAREFULLY:

"As many as are in favor of forming a Western Division Golf Club will please say 'Aye' and advise the undersigned, who will then call a meeting in order to form such an organization."

C. H. Thomas,
S. A. Captain, Pro Tem.

Top row left to right—V. H. Baethig, E. D. Anderson, H. R. Arnold, C. F. Danner, J. G. Carritt, L. D. Brainard. Bottom row—C. H. Thomas, J. J. Welch, W. J. O'Hea, H. I. Dodson, C. W. Tuttle, R. V. Hunter

W. J. O'Hea, the Winner, Making a 300 Yard Drive



J. J. Welch Holing Out for a Four

On the Last Green

The scores follow:

	A.M. Gross Score	A.M. Handicap	A.M. Net Score	P.M. Gross Score	P.M. Handicap	P.M. Net Score	Total Net Score 36 Holes
O'Hea, W. J.	91	20	71	92	20	72	143
Welch, J. J.	96	22	74	93	24	69	143
Baethig, V. H.	89	23	66	97	20	77	143
Arnold, H. R.	91	26	65	103	20	83	148
Thomas, C. H.	90	15	75	94	20	74	149
Anderson, E. D.	98	27	71	105	27	78	149
Tuttle, C. W.	103	27	76	101	27	74	150
Brainard, L. D.	95	18	77	97	21	76	153
Dodson, H. I.	106	27	79	119	27	92	171
Carritt, J. G.	124	27	97	109	27	82	179
Danner, C. F.	124	27	97	110	27	83	180
Hunter, R. V.	120	27	93	117	27	90	183

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The TREND of REGULATION

By R. V. Marye, General Attorney

Telephone Directories

THE Michigan Railroad Commission, in Schurtz *vs.* Citizens' Telephone Company held, on April 27, 1916, that the Commission should not fix the maximum period between the publications of telephone directories because it could not reasonably foresee the abnormal conditions which might cause a company to postpone a publication, as in the case then before it, nor could it, without having the facts before it, determine the relation of the directory publication to the rates of the company.

Advance Payments, Deposits and Denial of Service

THE Pennsylvania Public Service Commission, in Byrne *vs.* Fayette County Gas Company held, on June 30, 1916, that under the Public Service Company law every public service company may require deposits or advance payments whenever it may deem them advisable, but that the rules governing the requirement of such deposits or advance payments must be specific and set forth in the same explicit manner as the tariffs of the company on file with the Commission; that any deposit so required need not be applied to the payment of a bill before the denial of service, in that if the deposit were so applied and service continued, the company would deprive itself of the protection of the deposit to that extent and the very purpose of the deposit would be defeated; and that it was entirely appropriate for a gas company to require that a delinquent customer pay $1 for the extra labor and expense involved in restoring service that had been denied for non-payment.

Free Service to a Municipality Disapproved

THE Maine Public Utilities Commission in disapproving the application of the Wiscasset Water Company for approval of its contract with the town of Wiscasset held, on June 6, 1916, that the granting of free service to the town imposed an extra burden on its other subscribers and was unlawful, against public policy, and wrong in principle, in that the town and the company are not the only interested parties, but that each customer is interested and has a right to insist that the company and the town shall not be permitted to enter into a contract to disobey the law.

Simplification of Procedure

THE Maryland Public Service Commission, in granting the application of The Chesapeake and Potomac Telephone Company of Baltimore City, for the issuance of a general order permitting the telephone company from time to time to sell, lease or otherwise dispose of obsolete, worn out or superfluous items of property which are not essential to its ability to render proper service to the public, on June 20, 1916, held that since the consideration of unimportant and trivial cases involving the disposition of such obsolete and superfluous property has heretofore taken a considerable amount of the Commission's time and caused expenses to the company out of all proportion to the importance of the matters involved, and since the procedure in handling such matters was unduly burdensome upon the company and the Commission, without any compensating advantage to the public, the interest of the public will be fully conserved by the adoption of a simpler and more expeditious procedure. The Commission further held that the proposed change of procedure would carry out the intent and purpose of the Legislature in granting to the Commission supervisory power over such sales, leases, etc., to guard against the possibility of public utilities divesting themselves of property to such an extent as to interfere with their ability to serve the public.

The Commission in its order then directed that applications for approval should, in the future, be made by letter, accompanied by an executed copy of the agreement or other written instrument evidencing the transaction and three copies of a prescribed form of order; that the papers submitted should then be examined by an employee of the Commission and the consent of the Commission should be granted without a hearing unless the papers contain prima facie evidence that the ability of the company to serve the public adequately would be endangered by the consummation of the proposed disposition of property.

The adoption of this order relieves the telephone company of a great deal of the work and expense occasioned by the procedure theretofore in vogue.

Very shortly after the application of the telephone company was approved by the Commission, the Consolidated Gas Company of Baltimore City made a similar application, which was also approved by the Commission.

Moving Charge

THE Massachusetts Public Service Commission, in O'Connell *vs.* New England Telephone and Telegraph Company, on May 29, 1916, ruled informally that the term "moving charge" as used by the telephone company is a general one and that any work of whatever character performed in connection with a transfer of service is properly to be classified as a part of such charge; that in the instant case, while the instrument or wires within the house were not disturbed, it was necessary to assign one or more employees to disconnect the service at the cable box in the vicinity of the subscriber's station and to re-connect by the same method when service was again restored at such station.

Discounts for Prompt Payment

THE Illinois Public Utilities Commission, in approving the application of the Empire Telephone Company, of Bradford, Ill., for authority to change rates, held on June 1, 1916, that the practice of allowing a discount from the regular monthly rental when payment is made on or before a certain date is reasonable and permissible, as it tends to diminish the collection expense and loss from unpaid rentals and to lighten the resulting burden upon the subscribers who pay promptly.

Duplication Not the Remedy for Inefficient Service

THE Virginia Corporation Commission, in its opinion in the case of the Commonwealth of Virginia, *ex rel.* Augusta County Farmers' Mutual Telephone Company *vs.* Staunton Mutual Telephone Company, *et al.*, on August 2, 1916, stated that the wisest remedy for inefficient service is not unnecessary duplication of facilities, but is the improvement of such service, and that the company rendering inefficient service should be compelled to improve its service. This decision is in accord with the general trend of Commission decisions that duplication is not a remedy for inefficient service.

Higher Rate Allowed on Account of Higher Cost of Service

THE Wisconsin Public Service Commission, in approving an application for increase in rates in the City of Park Ridge, held on July 7, 1916, that it was proper to charge more for gas furnished through prepayment gas meters than for gas furnished without the use of such meters in that the cost of rendering service through the prepayment meter was greater than similar service through the standard credit meter, owing to higher meter investment, higher installation cost, higher maintenance cost, higher reading and accounting cost, and the losses due to petty thievery.

The Telephone in the Political Campaigns

The Habit Grows

PERHAPS there has never been a more striking example of the sheer power of the telephone to accomplish, to get action, than that afforded by the present political campaigns. To use it thoughtfully, systematically, aggressively, as well as for a mere passive convenience, the campaigners have found, is to begin to realize what the telephone's destiny in the world of action really is. And habit, gained in the unceasing use of the telephone during the campaigns, is not laid off like a cloak, but extends into the manifold interests and duties in which these active campaigners are engaged in many other fields. One of the leading workers has said, "I feel life would not be worth living without a telephone." With these campaigns to judge by, campaigners of the future, whether in politics or business, may well believe that "campaigns would not be worth fighting without the telephone as chief executive agent."

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NEW YORK TELEPHONE COMPANY

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F. H. BETHELL, Vice-President
H. F. THURBER, Vice-President
FORD HUNTINGTON, Vice-President
WALTER BROWN, Secretary & Treasurer
J. L. SWAYZE, General Counsel
C. T. RUSSELL, General Solicitor
R. V. MARYE, General Attorney

J. A. STEWART, General Manager
J. S. WILEY, General Auditor
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J. S. KENNEDY, Asst. Secretary and Secretary Employees' Benefit Fund Committee.

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Asst. to Gen'l Com'l Supt.

A. D. WELCH
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New Jersey

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Newark

Hudson

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Central

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Supt. Buildings & Supplies

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Real Estate Manager

W. T. GURNEE
Plant Accountant

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Traffic Engineer

H. G. GREENE
Manager Public Telephones

A. D. SCOVEL
Mgr. Traf. Inspection, M.-B.

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40 South Fifth Ave.
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81 Willoughby Street
Brooklyn

New Jersey

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Hudson

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Central

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Western

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Division Auditor Receipts
44 Church Street
Buffalo

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Correct TELEPHONE Habits

Bring you better Telephone Service

THE following suggestions are published at the request of a number of large business houses that are interested in developing pleasing telephone manners among their employees:

On all

OUTGOING *Calls*

ALWAYS look in the telephone book to *make sure* you call the right number. If you do not find the number in the book, ask "Information."

CALL *your number* with a slight pause between the hundreds and the tens. For example, in calling "Barclay 1263," say, "Barclay One Two (pause) Six Three."

SPEAK *clearly* and *distinctly*, directly *into* the transmitter.

LISTEN to the operator's repetition of the number and acknowledge it.

HOLD *the line* until your party answers and then give your whole attention to the telephone conversation.

TO RECALL the operator, move the receiver hook up and down *slowly*.

WHEN you have finished talking, say "Good-bye" and replace the receiver on the hook.

REMEMBER, courtesy over the telephone is always desirable. It wins friends for you and your company.

On all

INCOMING *Calls*

ANSWER your telephone *promptly* and *pleasantly*.

ANNOUNCE your name and the name of your department. Don't say "Hello."

BE READY with pad and pencil in order not to keep your caller waiting.

IF YOU require help in handling the call properly, get it at once or politely transfer the call to the employee who can best handle it.

IF YOU answer for another employee, offer to take the message, then call it to the other's attention at the first opportunity.

LISTEN attentively, so that you will not have to annoy the caller by asking him to repeat.

REMEMBER, abruptness or indifference *drives away trade*. Close attention to telephone orders helps win it.

MAINTAIN the same courtesy and consideration in a telephone conversation that you would with your customer face to face.

The voice with the smile wins

NEW YORK TELEPHONE COMPANY

Card reproductions of the above advertisement may be secured on application to our nearest commercial office

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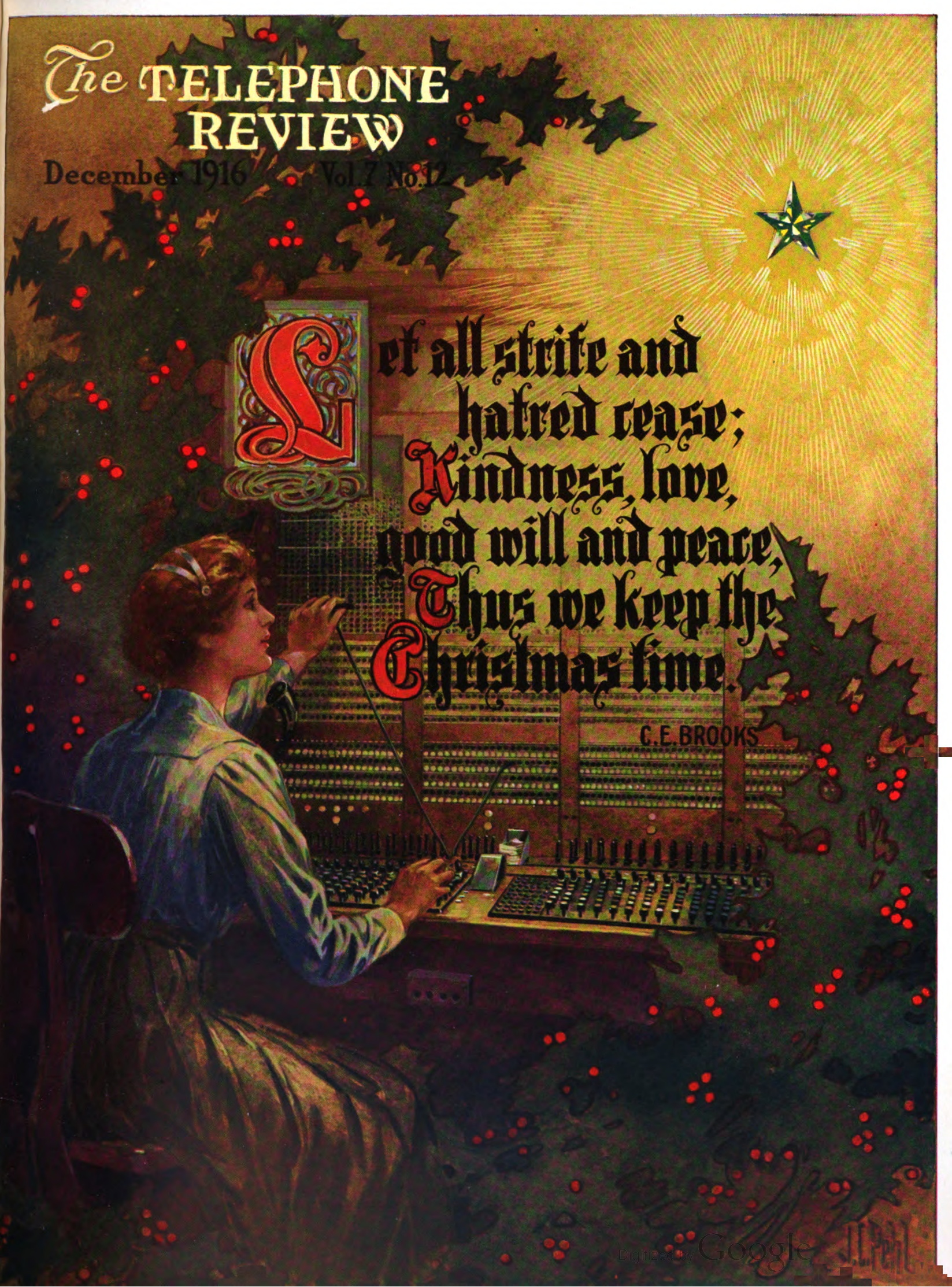
The TELEPHONE REVIEW

December 1916 Vol. 7 No. 12



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THE Presidents and other officials of the Associated Bell Companies during their annual conference, held in New York from the 14th to the 17th of November, stopped in the main corridor of the new Telephone and Telegraph Building and had their picture taken.

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The TELEPHONE REVIEW

New York December 1916

VOLUME 7 NUMBER 12

The TELEPHONE REVIEW

J. D. NEWMAN, Editor

Published monthly by the New York Telephone Company. U. N. BETHELL, President; WALTER BROWN, Secretary and Treasurer. Publication Office and Principal Place of Business, 15 Dey Street, New York.

Subscription: $1.50 the year, except to employees of the New York Telephone Co., to whom copies are furnished free of charge.

Remittance should be made by check, draft or money order, payable to the New York Telephone Company.

VOL. VII. DECEMBER, 1916 No. 12

Cogitations Inspired by an Election Worker

WITH the turmoil and distractions of the Presidential election over for four years more, there is time afforded for closer attention to the things which concern us in our daily work. One effect of such a diversion in our normal life is to enable us to see the large amount of time and energy we have at our disposal outside of our work. When we dissipate it, a little here and a little there, in many ways, it does not seem we have much extra time or energy for anything, but when concentrated upon one objective, it is apparent that there are many hours a day and much unexpended energy which are available.

Congratulations were recently extended to a young man under forty upon his promotion as superintendent of one of the largest manufacturing plants in the United States. He began at the age of fourteen years as an apprentice in a machine shop and helped to support his mother and four brothers and sisters. He found time for eight years to go to night school as a pupil and for eight years more he went to the same school as an instructor, making sixteen years in all. There he studied and taught the theory and practice of mechanical engineering and to-day he is one of the best qualified experts in his line.

It is the use which we make of our time out of hours, so to speak, which counts for the most in our work; and as the election has shown that we have many such hours, if we had never realized it before, there needs only the will and pleasure to turn them to account.

Telephone Educational Work in School and Out

IN many schools the lessons contained in the textbooks are supplemented by information gathered by the teachers, and these instructors often apply to the offices of our Company for assistance in explaining the telephone business to their classes in civics. During past years a great many lectures on the telephone have been delivered in the schools, and samples of our educational advertising have been furnished.

A combination of cultural and vocational education seems to be what the schools are trying to supply, and it is found that interest has been greatly stimulated by giving both the teachers and pupils a more intimate acquaintance with the telephone, which they are so familiar with but so little understand, along with the rest of the public.

Mr. J. F. F. O'Hea, district commercial manager, Williamsburg, received the following letter from a teacher:

> I want to thank you for the advertisements that you have sent to me. They have been most helpful to me and the other teachers in our school work. They also show as words cannot, what a wonderful help to humanity and what an aid to progress the telephone is.
>
> I appreciate what you have done for me, and I sincerely hope that you will coöperate with us in our educational work in the future, just as splendidly as you have done in the past.

We wonder how many of our fellow employees are able to give an understandable explanation of any part of the telephone business outside of his or her own department? We would suggest that they also study the educational advertising issued by our company so that the children in the schools where this is done will not know more than they do.

The pages of this magazine every month contain articles by employees which every other employee should not fail to read for the interest and informative value they possess. We take this opportunity to recommend a careful reading of the advertisements of this Company and of the A. T. & T. Co., copies of which are frequently printed in this magazine.

THE BALLAD OF THE MURDERED MERCHANT

All stark and cold the merchant lay,
  All cold and stark lay he.
And who hath killed this fair mer*chant*?
  Now tell the truth to me.

Oh, I have killed this fair mer*chant*
  Will never again draw breath;
Oh, I have made this fair mer*chant*
  To come unto his death.

Oh, why hast thou killed this fair mer*chant*
  Whose corpse I now behold?
And why hast thou caused this man to lie
  In death all stark and cold?

Oh, I have killed this fair mer*chant*
  Whose kith and kin make moan,
For that he hath stolen my precious time
  When he useth the telephone.

The telephone bell rang full and clear;
  The receiver did I seize.
"Hello!" quoth I, and quoth a girl
  "Hello! . . . . One moment, please."

I waited moments ane and twa,
  And moments three and four,
And then I sought that fair mer*chant*
  And spilled his selfish gore.

That business man who scorneth to waste
  His moments so rich and fine
In calling a man to the telephone
  Shall never again waste mine!

And every time a henchwom*an*
  Shall cause me a moment's loss,
I'll forthwith fare to that of*fice*
  And stab to death her boss.

Rise up! Rise up! thou blessed knight!
  And off thy bended knees!
Go forth and slay all folk who make
  Us wait "One moment, please."

F. P. A., in the N. Y. Tribune.

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Of Interest to Patrons

THE efforts of the Company to impress upon the public the importance and value of correct telephone habits is meeting with gratifying results. This is evidenced by the publication of two pamphlets issued on the initiative and at the expense of two important corporations. Copies of the pamphlets have reached us. One was accompanied by the following letter:

QUEENS BOROUGH GAS & ELECTRIC COMPANY
FAR ROCKAWAY, L. I.

Mr. G. M. Greer, New York Telephone Company, Far Rockaway, L. I.

MY DEAR MR. GREER:

I enclose herewith several pamphlets which were issued by us on "How to Get Prompt and Satisfactory Information by Telephone," which was largely compiled from information received from you and Mr. Davenport with a few minor changes made by this office after reading all of the literature which we could get on the subject. You will note that we have cribbed everything that we possibly could, and I want to thank you again for your very kind assistance in supplying us with so much material on the subject.

Yours very truly,
(Signed) CARLTON MACY, *President.*

Another booklet of the same character, issued by the Texas Oil Company, entitled "Telephone Efficiency," has been distributed among the employees of that company. The standardized rules on telephone courtesy are followed by instructions as to the manner of conducting a telephone conversation in the most direct and efficient manner.

Another corporation which is preparing a similar booklet is the New York and Queens Electric Light and Power Company.

To interest other business concerns who have as yet not published such information to their employees, the Company has prepared a leaflet with information succinctly written with the object of improving telephone service for such firms as will carry out the suggestion. It is intended to supply these leaflets to various firms with a space to allow for the printing of the name of the company issuing them.

Mrs. MacDermott's Department

A SUITE of rooms has been provided in the Cortlandt-Dey Building for use in case of sickness or accident among the employees located in this building.

Employees who wish to do so may consult Mrs. MacDermott, Room 705, the graduate nurse, who is in charge, at any time during the Company's office hours.

She will render first aid in emergencies and if desired by the employee, will administer simple forms of relief for slight indispositions in cases where it seems advisable to do so. In cases of accident or illness requiring attendance in the employee's office, Mrs. MacDermott may be reached by calling her on Cortlandt Official, Extension 747.

In accordance with arrangements made with the American Telephone and Telegraph Company, offices in the 15 Dey Street Building are free to call on Miss Arthur, the nurse in the 195 Broadway Building, in cases of accident or illness requiring prompt attendance, in the event that the nurse in the 15 Dey Street Building is not immediately available.

Thinking About the Telephone

MR. VAIL'S remark on a memorable occasion, "Yes, everybody *knows* about the telephone, but everybody doesn't *think* about the telephone," finds verification every day.

The following letter shows how a large business concern in New York, with many telephones, never seemed to *think* telephone until an emergency need arose. The result so brilliantly illuminated their understanding that they realized all at once the wonderful possibilities which follow *thinking* about the telephone. Such letters are tributes which every employee shares, for all are essential to such service as the Bell System excels in.

FREDERICK COURTENAY BARBER AND ASSOCIATES
ONE MADISON AVENUE
NEW YORK

New York Telephone Co., 15 Dey Street, New York City.

GENTLEMEN:

The value of the long distance telephone was demonstrated vividly to us yesterday evening, when in about a half hour we had important conversations with three persons at widely different places.

The prompt, efficient and courteous service was highly gratifying. In less than five minutes after we put in a call, we were talking with a person in Providence, R. I.

A member of our staff was reached in Auburn, N. Y., almost as quickly.

Although forced to make a local call after we put in a request to speak with a person in Elizabethtown, N. Y., the instant we hung up the receiver after the Manhattan conversation, the connection to Elizabethtown was made and the conversation conducted.

We feel impelled to tell you of this excellent service. Your operators were uniformly courteous, as usual, and we wish them to know through you that their cheerful, obliging and efficient work has impressed us as a concrete example of the success with which they are carrying out the company's aim to serve the users of telephones most efficiently.

Your philosophy that the voice with a smile, combined with individual capability, makes for 100 per cent. efficiency, again was vindicated by the service we obtained in last night's emergency.

Yours cordially,
FREDERICK COURTENAY BARBER AND ASSOCIATES,
BY CORNELIUS M. SMITH.

Very Much Alive, in Fact

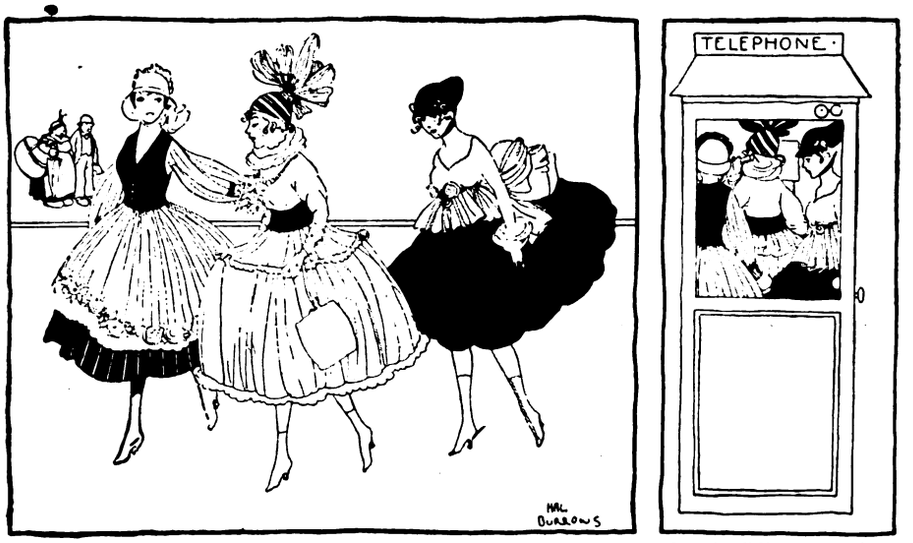
ART has taken her last toboggan and has plunged into the waters of oblivion, never to arise while the Muse is as dead as the well-known door nail. That's what George Moore, the English novelist thinks, according to the *Atlantic Monthly*:

The steamboat and the railroad debauched the Muse and she died, strangled in telegraph wires; the telephone chants her requiem.

That was Moore's answer when asked what effect the war would have on Art. It was his opinion that the war couldn't have any effect because Art no longer strolls among us, being now one of the late lamented. Mr. Moore reasons that segregation produced the masterpieces of art and when universal exchanges of ideas and universal travel became part of our lives, Art got badly mixed up.

Our idea of Art and the dictionary idea of art leads us to remark that the men and the thing that made it possible to talk from town to town, from State to State, from coast to coast and finally from continent to continent, are included in that which is called Art. Telephony, which has made it possible to lengthen the tongues of men, is, to our way of thinking, somewhat of an art, and it is a long way from requiems.

CHARLES SPEAKS, *Copy Department.*



"How Is It That Three Girls Who Take Up This Much Room on the Street Can Stuff Themselves into a Telephone Booth this Size?"—*Puck.*

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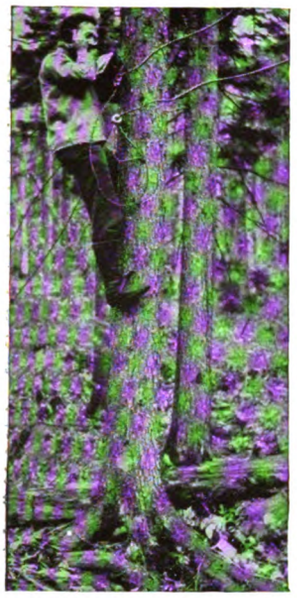

The Observers Themselves Are the "Trouble Shooters" on these Circuits; the Telephone Lines Must Be Maintained Even Though Storms and Fires Wreak Havoc

One of the Fire Observers of the Conservation Commission on a Mountain Top in the Adirondacks Watching for Possible Outbreak of Forest Fires

Protector Box, Summit of Mt. Ampersand. Note How Porcelain Insulators Are Fastened to Tree Trunk so as to be Flexible Enough to Withstand the Swaying of the Trees in the Wind

The Telephone in the Forest Fire War

By E. R. Stonaker, Superintendent of Traffic, Mountain Home Telephone Company

Only a man in a forest green,
Only a match that was dropped unseen,
Only a flame—some leaves and wood,
And only a waste where the forest stood.

"GOFF! Quick! Water!" The rural line operator could barely understand the husky, cracked voice which answered her "Number please?" but she knew that the line connected the fire station on Whiteface Mountain and that early that morning a forest fire had been reported from there. The connection with "John Goff's farm" was made in an instant and when the answer came the speaker had recovered enough to give the message: "This is Hank Denton on top o' Whiteface. We been fightin' fire on the south side all day. The mountain's dry and the boys is all in. Saddle your mare and hustle some cans o' water up here, will ye?"

"You betcha," came the reply and John was off after the water.

As fast as possible the little mountain pony with two twenty-gallon cans of cold well water strapped to her sides was urged up the rugged side of the mountain to where the men lay, well-nigh dying of thirst.

Weeks of exceptionally dry weather had produced conditions favorable to the rapid spread of fire, and that morning the observer on Whiteface had detected a light spiral of smoke high on the mountainside. The fact had been quickly reported by telephone to the forest ranger, who had rounded up all the able-bodied men in the vicinity and impressed them into the service of fighting the fire.

The difficulty in this instance was that Whiteface is a "dry" mountain, that is, one on which little or no water is found after the surface water is dried up, and that the forest was of second growth pine, which, from its resinous character, burned like tinder. A succession of ledges like mighty steps, overhung with trees, drew the fire up the mountain with amazing rapidity. This peculiar formation of the ground was not only an aid to the fire as it climbed upward, but also a hindrance to the men in their efforts to check it. The men worked desperately, however, under the direction of the ranger and his deputies, digging ditches here, beating out the fire with green brush there, and in some

"Trenching to Stop Forest Fire

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The Last Section of Pole Line on the Summit of Mt. Ampersand, Showing the Observation Cabin Which Shelters the Telephone Instrument, and Affords Protection to the Observer in Bad Weather

places resorting to the extreme method of fighting fire with fire. Sometimes a man barely escaped being surrounded entirely by fire, just missed being caught like a rat in a trap until the flames should creep up and envelop him; cool-headed and resourceful, those in charge of the work were constantly on the alert to warn the men every time this dread fire-trap threatened. All day the men worked, the glare of the sun, the heat and smoke of the fire making their thirst almost unbearable and there was not a drop of water to be had. With the going down of the sun the fire burned less fiercely, and eventually the fight was won. But with relaxation came the reaction, and in trying to round up his men the ranger found many of them lying with their faces to the ground, moaning for water. One of the younger men volunteered to get it and knowing that the quickest way was to telephone someone on the nearest farm to bring it, he climbed, nearly exhausted though he was, to the mountain peak and the telephone.

This incident is typical of the experience of the fire-fighters, of the work of protecting the forests from their arch-enemy, fire, and in some measure of the service of the telephone in this protection.

THE Forest Fire Protective Force of New York State, charged with the duty of protecting the forest preserves of the State, including 10,773,000 acres in the Adirondack region and 2,913,000 in the Catskill region, is under the direct control of the Conservation Commission, Bureau of Forestry, headed by the Superintendent and Assistant Superintendent of State Forests. The force consists of five district forest rangers, and 194 fire wardens. In addition to these there are fifty or more men on the mountain observation stations, each with telephone connections from the mountain peak to the nearest Bell Telephone office.

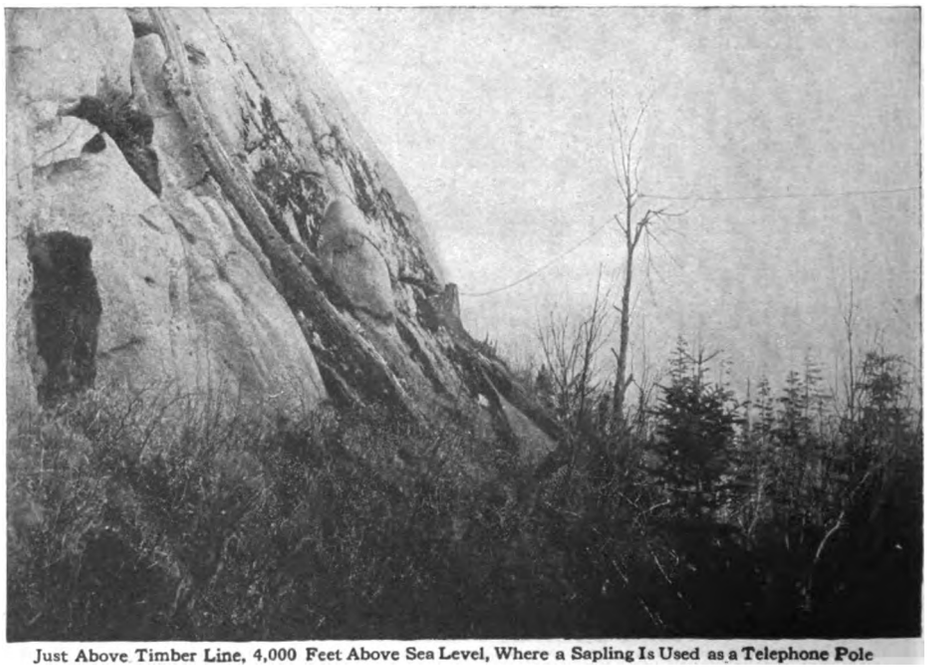
It is this system of observers' stations, equipped with telephones, which is the keystone of the whole structure of fire protection of our forests. Before the telephone was adopted the ranger upon discovering a fire had to ride to the nearest settlement to give the alarm. All the able-bodied men available were then gathered, and by the time they could get back to the fire it had spread rapidly and very probably had gone beyond human control. With the telephone in the lookout stations, the observer has simply to keep a perpetual watch over his allotted section. When he discovers a fire he plots the exact location of it on a map, and telephones the information to the fire warden, and the proper steps are taken for mobilizing the fire-fighters.

Telephones were first installed in ten of the observation stations in the early summer of 1910 and that year they were the means of reporting and holding in check 169 fires. Now there are over fifty observation stations on the most advantageous peaks of the Adirondack and Catskill ranges and each station is equipped with a telephone. The circuits terminating in the nearest Bell central office are full metallic, but the "poles" in this wild country are those furnished by Dame Nature, the trees themselves, and the "pole line" follows the trail to the summit.

At ten of the observation stations steel towers have been erected, constructed something in the manner of the fighting mast of a modern dreadnought. They are thus able to withstand the terrific gales, and afford vantage points from which the observers can see in every direction. Near by is the cabin of the observer, where he lives from early spring until the snow flies. During the winter, when the danger of fires is absent, the telephones are disconnected, and the wires are left to withstand the storms as best they may. "Plant maintenance" is always a difficult and perpetual job in the woods, as falling trees and other uncertainties of the forest are constantly at work against it.

A word about what causes forest fires, the methods of prevention, and the principles of fire fighting is necessary to make clear the task that the telephones of the forest district have in hand.

THE causes of forest fires in order of importance are railroad locomotives, lightning, careless campers, fishermen and hunters, and settlers clearing land. Of these only the lightning is non-preventable, and the steps



Just Above Timber Line, 4,000 Feet Above Sea Level, Where a Sapling Is Used as a Telephone Pole

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taken to prevent forest fires have been many and thorough. During the seasons when danger from forest fires is great, oil is substituted for coal as fuel for locomotives passing through the forest area. The fire hazard from clearing the land is limited by allowing this to be done only under permit and with proper supervision by the Conservation Commission. Education and a strict enforcement of the penalty for leaving campfires burning are the implements for fighting the third cause of forest fires. In the matter of careless smokers, education is the only available weapon. Placards calling attention to the fire danger, the precautions necessary, and the penalty for setting or leaving fires are posted throughout the forest areas. The propaganda is carried on also through the medium of the railway timetables and the telephone directories. On all telephone directories in the Adirondack region are printed these special instructions:

Use the telephone to report forest fires.

The State Conservation Commission maintains a force of men to fight forest fires, but the help of every person who goes into the forest for business or pleasure is needed to make the work of these men effective.

If you discover a forest fire report it at once to the nearest forest ranger.

Do not throw lighted matches, cigars or cigarettes where they may start forest fires.

Do not leave your camp fire until you are absolutely sure it is out.

Exercise the same care with fire in the forest that you would take in your own home. The law requires it.

THERE are three kinds of forest fire, the "surface fire," which merely runs in the leaves and ground litter, the "ground fire," which burns in the deep layer of humus, sometimes several feet thick, that covers the floor of dense forests, and the "crown fire," the most disastrous and terrifying of all. A crown fire sometimes results from a ground or surface fire, when it reaches the top of a ridge or knoll and the increased draft carries the fire up the trunks of the trees to the tops or "crowns." The dense forest growth, the amount of inflammable material on the ground, the kind of timber, especially if it is the coniferous variety, the severity of wind and the dryness of the atmosphere all combine in this class of fire to make an extensive conflagration. It is the crown fire which has made the great forest fires of history. The worst single forest fire in New York State was probably that at Long Lake West in 1908, when about 300,000 acres were burned over in a single day, destroying $130,000 worth of property and almost catching the residents of the little hamlet of Long Lake West in a death trap. The village was wiped out, and had not the fire train arrived in the nick of time, not a soul in the place would have escaped.

On the Summit Wires Sometimes Have to be Laid Along the Bare Face of the Rock

In those instances where preventive measures have failed, there are certain known principles of the action of forest fires on which the methods of combat are based. These are:

1. Fire travels much faster up hill than down.

2. It travels rapidly before wind and slowly against it.

3. A large amount of inflammable material on the ground means a hot fire that cannot be approached too closely.

4. The severity of the fire depends upon the character of the timber.

5. The hotter the fire the further from it the fire line will have to be started.

6. Fires, and the winds which accompany them, die down at night and spring up in the forenoon, so that evening and early morning are the best times to attack them.

"Trenching" or surrounding the burning area by a trench from which everything down to the mineral soil has been removed, is the only kind of fire line which will stop a ground fire, and it will often stop a surface fire.

For surface fires "whipping," or using brush, branches or watersoaked sacking to whip the burning leaves at the edge of the fire back into the burned area, is most effective. Sand as well as water is valuable in fighting this kind of fire, too.

There is only one way to fight a crown fire. That is by "backfiring," fighting fire with fire. This method is extremely dangerous, consisting of setting a counter fire far enough from the main body of the original fire so that all inflammable material will be burned by the time the fire reaches that point, and the fire will die from lack of fuel. The backfire is set far enough from the

A Section of "Pole Line" Following the Trail Up Mt. Ampersand. The Porcelain Insulators Are Fastened to the Trees by Wire to Insure Sufficient Flexibility When the Trees Sway

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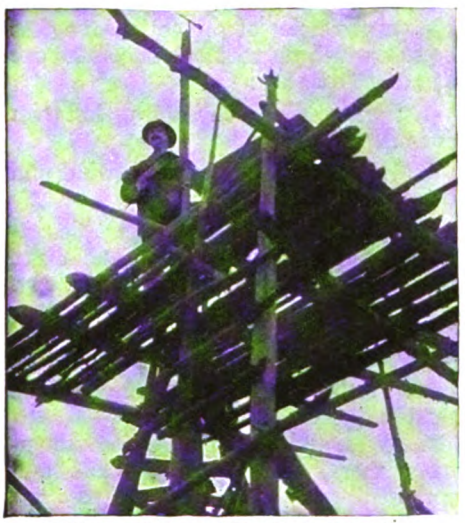
Primeval Adirondack Forest

Four Thousand Feet Above Sea Level an Observer Discovers a Forest Fire. Summit of Mt. Ampersand

A Source of the Hudson

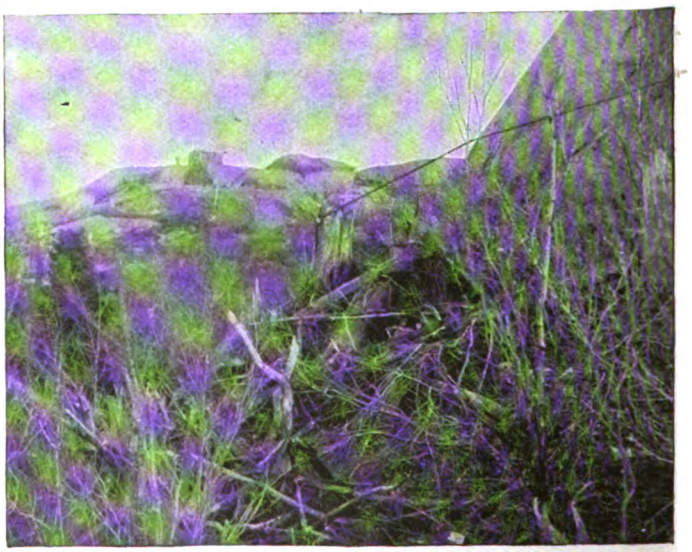


An Observer's Tower Fifty Feet Above the Mountain Top

An Observer Telephoning from His Mountain Cabin

Repairing a Telephone Line on Lyon Mountain

Observers' Cabins in One of Their Settlements



Telephone Construction Above the Timber Line

THE TELEPHONE IS THE GREATEST AID IN PROTECTING NEW YORK'S FORESTS

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main fire to escape the draught which is fanning the main fire. It is set where it will burn uphill, or it would do more harm than good, and is kept from crossing the fire line previously established.

After the fire has been extinguished, a man is left to patrol the burned area for a day or two to make sure that every vestige of fire is extinguished.

THIS rather detailed account of the forest fire problem has been given so that the part of the telephone not only in the detection but in the fighting of forest fires may be understood more clearly.

When one pictures the work of handling a forest fire from the moment it is discovered by the observer, through the hasty gathering of the fighters, summoned by telephone, the ordering up of supplies on the "fire train," both materials and tools, and food for the men, the warning of endangered towns, and the disposal and intercommunication of the forces working at different points against the fire, it may be easily imagined what a vital part the telephones play. A dollars and cents statement of what the telephone has done is shown in the following comparison of figures; but it must be remembered in reading them that the greatest value of the telephone in forest fire protection and prevention cannot be expressed in dollars and cents.

Year	Area Burned	Property Loss	Cost of Extinguishing Fire
1903	464,189 acres	$846,082.00	$152,763.95
1908	368,072 acres	802,135.00	189,661.51
1913	54,796 acres	51,445.00	43,203.00

It will be remembered that the telephones were used first in 1910 in connection with the detection of forest fires, and by 1913 the telephone system of fire fighting had become fairly well developed. The figures given are for the last three "fire years," as those especially dry years are called when conditions of drought make the fire hazard particularly great, and the statistics for the year when the telephone was at work, as compared with the situation before, shows a decrease of 85.1% per cent. in area burned; of 94.8 per cent. in property loss, and of 77.2 per cent. in the cost of extinguishing the fires.

In the presence of these facts, Mr. C. R. Pettis, superintendent, and Mr. W. G. Howard, assistant superintendent of the Division of Lands and Forests of the New York Conservation Commission, recognize the value of the telephone in their fight against forest fires and are doing all in their power to extend the forest telephone system and coördinate it with the Bell System. In this they have the cordial coöperation of the Mountain Home Telephone Company, an instance of whose readiness to assist on the double quick in emergency is illustrated in the following account of one of the big Adirondack fires in 1913:

Just as the telephone has proved its value in keeping in communication various military detachments in the war of man against man in the present European horror, so did it perform a similar service in the three weeks' battle of man against fire, waged in September, 1913, on the heights of St. Huberts at the base of Dix Mountain, in the very wildest and most inaccessible portion of the Adirondacks. Superintendent Pettis was the "General Joffre" of this occasion, and a battalion of the Fifth United

Keene Valley from Keene Heights Showing Miles of Forest Lands Which Are Protected by the Network of Telephone Wires

States Infantry, on a practice hike out of their barracks at Plattsburg, constituted his army.

An old Adirondack guide, once being asked what was the population of St. Huber's replied, "Mostly pines and hemlocks." Therefore District Forest Ranger John Harding had not been able to find enough men to impress into his service in his fight against the fire. Mr. Harding at once reported the fact of his losing fight to his superior, Superintendent Pettis, who arrived on the scene of battle as soon as possible. He found that a battalion of United States soldiers from Plattsburg Barracks was camped on a practice hike a few miles away in the Black Brook country. Immediately he telephoned the Conservation Commission, who in turn communicated with the Governor, and permission was obtained from the military authorities at Washington to use the soldiers. So Uncle Sam's fighters were ordered into action. But the battle front—the fire line, not the firing line—was six miles long and the soldiers, while trained in one kind of fighting, knew nothing of forest fire fighting. Proper supervision must be given these green men in their work or more harm than good would be done. Constant communication between Mr. Pettis and his lieutenants must be established. But how? The six-mile battle front was over the wildest and roughest of mountain country, utterly unnegotiable by horse and offering great difficulties to the pedestrian. The telephone, of course, was the only answer, but this instrument of civilization had not yet penetrated into this wild country. The nearest telephone was at St. Huberts Inn, miles away, where there were people to use it. The problem was put up to the Mountain Home Telephone Company and they came quickly to the rescue. Wire Chief Bassett of Elizabethtown was dispatched to the field of action with six miles of twisted pair, several portable sets and all the necessary equipment. A headquarters office was quickly established, the various sets were connected up at the forest rangers' camps along the fire line and by means of the twisted pair laid along the ground a sure and thoroughly flexible means of communication was established and the situation was soon in hand.

What more typical action could be recounted? The "volunteers" are waging a losing fight against the enemy, so the regulars are ordered into action. They are handicapped to the point of inefficiency, when the "Telephone Reserve" appears upon the scene and the battle is won!

New York Telephone Company Employees as Soldier Boys in the Shade of the Sheltering Palm and in the Sun with the Cacti at Fort McAllen, Texas

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The Distribution of Election Returns from Telephone Headquarters at 15 Dey Street

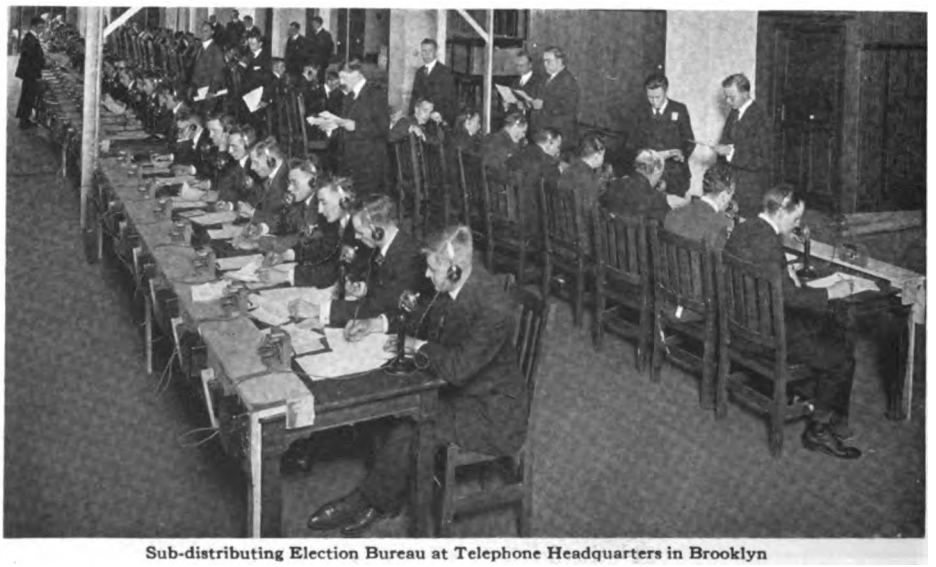
Telling the People All About It

How the Election News Was Given Out by Telephone

WHEN the world wants news, it telephones; and the amount of telephoning it did to ascertain the news of the recent Presidential election was greater than ever in its history. Thanks to the local, toll, and long distance lines of the Bell System, there was scarcely a hamlet or isolated cross-roads settlement in the country which, if it would, could not have obtained the latest election returns by telephone. And the amount of telephoning that was done to inquire about the returns that had not been reported, showed how almost automatically campaign managers, newspapers, and others interested, turned to the telephone for the latest information in the closest electoral contest since the invention of the telephone.

The Transcontinental Line between the Atlantic and Pacific coasts was kept busy, along with the local lines which supplied to any inquiring telephone patron news of the general results. The closeness of the vote and the delay in the returns in California served to illustrate, more than imagination could picture, the supremacy of the telephone over all other means of communication. When the vote was so close in that State that one ballot per precinct would have changed the result, the interested and impatient leaders in the East could brook no delay in getting answers to their anxious inquiries, and by calling up over the telephone they asked their questions and got their answers, discussed the situation, and formulated their plans.

In order to assist in meeting the demand for election news, the New York Telephone Company conducted an Election Bureau, as it has done in previous years. Here again was an organized and systematic method of collecting and disseminating information which might be duplicated in its parts by almost any business, social, political, educational, charitable, or religious organization, as will be seen by the following brief outline.



Sub-distributing Election Bureau at Telephone Headquarters in Brooklyn

The Election Bureau was located in the Company's headquarters in 15 Dey street and consisted of four departments—one for gathering the information; another for tabulating it; a third for preparing the bulletins; and the fourth for distributing them.

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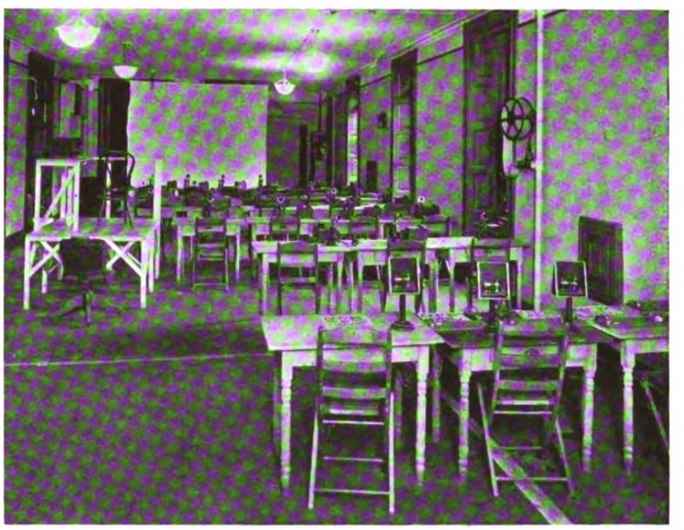
Receiving and Tabulating the Election Returns and Editing the Bulletins, at Dey Street Bureau

Gathering the Election Returns

There were seven incoming circuits supplying the news, one each from the Democratic and Republican National Headquarters, one from Police Headquarters where the results in Greater New York were gathered, one from the A. T. & T. Co., and three from leading newspapers in and outside of the city. At each of these points named there were news gatherers who transmitted the information to the tabulators. These tabulators compiled the data as it came in and passed it over to the editor and his assistants who made up the bulletins. The bulletins were then dictated to typists, one of whom made a radio mat and the others made manifold copies. All copies were then passed to checkers who compared them carefully with the original bulletins as prepared by the editor, for accuracy. The information had now been gathered, tabulated, typed, and was ready for distribution.



Layout Showing Stereopticon and Screen in Distributing Room

Distribution

The typewritten copies were used for reference. The radio mat was placed in a stereopticon and flashed upon a screen located at the end of the room, so that all the distributing operators could read it.

The radio mat deserves special comment. It was an idea developed by Mr. W. A. Oakley, instructor of the Plant School. The gelatine plate of which it is made will take typewriting direct and when treated, becomes impervious to heat and may remain exposed to the heat of the lamp for an indefinite time without being affected.

As each bulletin was about to be thrown on the screen, the sending operators were signaled by means of a bell, and as the bulletin appeared on the screen, they, having signaled the distant points on their lines, read off the bulletin, which was copied for the information of the local offices to which it was transmitted.

There were twenty-two outgoing telephone circuits which took care of Manhattan and the Bronx, Westchester, Long Island, and New Jersey, and two Morse circuits which took care of up-state points. There were twenty-four men comprising the sending staff so as to provide frequent relief.

In Manhattan and the Bronx the bulletins were received at six sub-distributing centers. In Westchester there were six, in Long Island five, in New Jersey five, and up-state there were nineteen.

At each of these forty-one sub-distributing centers the bulletins as received were copied and sent out to other distributing centers, and so throughout the entire territory the information was fanned out, so to speak, through the organization of the New York Telephone Company, and anybody anywhere had only to lift the telephone receiver and ask for the election news, to get the latest and most complete returns from the election operator.

This information, supplied by the central bureau at 15 Dey street, was supplemented at each point by local information gathered there. So speedy was this service that as much as eleven minutes elapsed after the information was passed over the telephone lines before the same bulletins appeared on the bulletin boards of the newspapers.

The bulletins were not numbered, but timed. The first bulletin was sent out at 5.45 P.M. and the last at 12.45 A.M. There were ninety-one bulletins sent out. This was at an average of thirteen per hour, and the superstitious may think that here again "thirteen" was a lucky number for Mr. Wilson.

A SUBSCRIBER at Astoria upon being told that the number which she called was temporarily discontinued said: "Perhaps they are out." The operator replied that the telephone had been taken out for a short time, whereupon the subscriber exclaimed: "Oh, have they taken it with them."

HELEN ANDREWS,
Operator, Astoria Exchange.

All the Up-to-Date Conveniences.

The Indianapolis *News* recounts the desperate case of the town character of a little Western hamlet. Impressed with the benefits of the telephone, he had one placed in his office, just over a livery stable.

The livery stable also installed a telephone.

The town character, as soon as his telephone was in, sat down and waited for someone to take advantage of the new instrument. No one did.

One day the telephone bell in the livery stable, however, rang out lustily.

"Hello," shouted the stable proprietor.

"Hello, yourself," came the voice of the town character upstairs, "Just pass me the broom up through the front windows, will you?"

Typing the Bulletins and Comparing Them

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John A. Barrett

JOHN A. BARRETT, who passed away at his home in Maplewood, N. J., on November 9, ranked high among the engineers of the Bell System who by their studies and inventions have advanced the art of telephony and have made universal telephone service a reality.

He was born in Woodstock, Vt., April 30, 1858, and was the son of Judge Barrett of the Supreme Court of Vermont.

In 1882 he entered the service of the Western Electric Company, with whom he remained for two years. During this period he assisted in the development of the Patterson cable, and greatly improved the chloride of silver battery.

A Faradic battery and a Galvanic battery, both of which are still in use, were among the fruits of Mr. Barrett's genius during the next two years.

John A. Barrett

In 1886 he was employed by Mr. E. J. Hall to study the crosstalk problem on the New York and Philadelphia line, which had been completed by the A. T. & T. Co. in 1885.

While working out this problem, Mr. Barrett invented the transposition system, since then in general and continuous use. The principles laid down by Mr. Barrett as a result of this remarkable work were firmly established and have never been departed from.

When in 1888, the New York and New Jersey Telephone Company began the manufacture of underground cable, Mr. Barrett became associated with the late W. D. Sargent in that work, and was the first to use paper insulated wire and continuous cable sheath, both of which are standards at the present time, having been adopted by all manufacturers.

On November 10, 1893, after three years in other work, Mr. Barrett re-entered the service of the American Telephone and Telegraph Company. Since that time he had been in active service in the Engineering Department and during his twenty-three years of service his work had covered many branches of telephone engineering, including selective bells, power and light interference with telephone circuits, particularly with reference to the interference caused by the New York, New Haven and Hartford Railroad in the electrification between New York and Stamford.

In recent years Mr. Barrett had been handling engineering work and working out technical problems in legal cases.

Mr. Barrett was a member of the Telephone Pioneers of America. He was an honorary member of the New York Telephone Society, and a member of the American Institute of Electrical Engineers.

Went to "School"

I HAVE had the privilege of attending the Operators' School at Newark, N. J., for a five days' course, and, thanks to the most excellent tuition of Mrs. Davenport and her able staff of assistants, obtained an insight into operating conditions which will be of material assistance to me in a variety of ways.

One feature which distinguished this course and added very largely to its value was the actual experience the class had in handling various kinds of calls at the switchboard, thus giving an ideal combination; theory and practice.

The patience of the "subscribers" who were at the tender mercies of the amateur male operators was almost unbelievable, and although mistakes were made, wrong numbers, plugging into busy lines, picking up wrong trunks, incorrect phraseology, tickets improperly made out, etc., not once did a word of reproach come back over the wires.

The class of October 16–20, I think I may take it upon myself to say, gained an insight into many traffic conditions which were not previously properly appreciated, and finished the course with a much more sympathetic view of the many difficulties and trials operators are subjected to.

H. BELL,
Local Commercial Manager, Englewood, N. J.

Pre-Election Day Operating Efficiency

AN illustration of the pre-Election Day service, is described in the following letter of appreciation:

Fredd H. Dunham, Attorney at Law

BATAVIA, N. Y.
September 20, 1916.

Mr. A. M. Forster, Mgr., New York Telephone Company, Batavia, N. Y.

DEAR MR. FORSTER: In behalf of the Republican Committee, I beg to express to you my gratification and thanks for the very excellent service rendered by your Company to us yesterday and the efficient manner in which the many calls were answered. I sat constantly at the desk in the Republican Headquarters from about 8.30 A.M. till 6.30 P.M., and I have no doubt that you answered over five hundred calls that I sent in. The service was excellent and I feel like extending my personal thanks to you and to the very efficient operators who handled this matter for us with the least possible delay and with uniform courtesy throughout the day. I know none of the operators who handled this, personally, but I wish you would accept from me and extend to them my very hearty thanks for the splendid service shown in your office.

Very respectfully yours,
(Signed) FREDD H. DUNHAM.

A Practical Suggestion

AN interested subscriber in Syracuse has sent us the following communication. His suggestions as to how the public can coöperate may be applied also to our own use of the telephone.

SYRACUSE, N. Y.
9/15/16.

The Telephone Review
Editor:—

Read your magazine with interest, especially articles on cooperation of the employees of your company. Don't you think a little more cooperation on the part of the public would be better still?

It is a fact that the majority of people who use a telephone daily, know the transmitter carries the voice, the receiver enables us to hear and the use of the bell, but to this their knowledge is limited.

They don't know

a. The department to call for in regard to bills and contracts.

b. That there is a Complaint Desk, a Traffic Chief and an Information Desk to answer the various questions operators are forbidden to answer.

c. The meaning of special operator, many people feel insulted when connected with these operators.

d. The necessity of speaking directly into the transmitter.

e. The importance of enunciation in preventing wrong numbers.

f. The inconvenience caused by leaving the receiver off the hook, a slow answer or an abandoned call.

g. Last but not least the importance of an acknowledgment of the operator's repetition.

Not knowing these facts the public cannot coöperate, which they would I am sure if they knew them.

Why not tell them. Give them a book of rules. Let the public know something about the other end of the wire.

The Voice with the Smile Wins. Let the Smile be at both ends of the Wire.

(Signed)
A FRIEND TO THE GIRLS AND TO THE PUBLIC.

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The Value of Perfect Vision to Employers

By Carl J. H. Kleysteuber, Murray Hill Acc. Center

THIS is a subject which I have had in mind a good many years and which I deem is of the utmost importance to employers of large forces of men and women.

This is an age of efficiency, and all large corporations as well as the smaller ones see to it and let it be known that they want nothing but efficient service from those whom they employ.

Fortunately, to begin with, the modern office buildings of to-day are equipped with the most up-to-date lighting systems and facilities of which a prospective tenant is quick to take advantage. Of course, this is not the only thing he looks upon, as the building must be in a desirable location so that it will be expedient for him to render such service as his business requires.

Unfortunately, there are in this city and in other cities, office buildings wherein lighting facilities are not of the best. Up-to-date lighting systems are not a matter of guesswork but of diligent study on the part of the engineers versed on that subject, as we all know.

For those who work in offices this article is intended, particularly, the bookkeeper or clerk who is required to work by artificial light most of the time. Herein comes the value of having good eyesight.

It is a trying thing for a person with normal vision to work under artificial illumination, but think of the misery those suffer who have not the good fortune to possess normal vision, that is, if their vision has not been made normal by the use of properly fitted glasses. They go about from day to day suffering from what they call headaches. These headaches are not caused by upset stomach, as many think, for common sense tells us that we could not pursue our daily vocations long if we were suffering from disordered stomach. Of that a physician can tell you more.

It is nothing more than eye strain, which I can assure you has its harmful results. The eyes of those who work by artificial illumination must and should be taken care of, not only to avoid serious results which "safety first" would have prevented, but for the more immediate reason that if one cannot see well it is impossible to do an accurate job.

I have demonstrated that the above so-called headaches are nothing but eye strain. It is not eye strain alone that causes discomfort; there are different conditions that exist to cause anyone inconvenience, such as sore eyelids, styes, far-sightedness or near-sightedness, and other defects of vision. These, of course, are conditions that can be remedied by the use of glasses.

The employees who work with greatest difficulty under such conditions are those who do clerical work and those who have to count and read tickets all day.

The eyes of all human beings are possessed of a certain amount of accommodation to enable them to see distinctly for all distances, but every pair of eyes is not possessed of the same amount—hence eye strain and defective vision—and as a person grows older this accommodation weakens so that the result can readily be seen. Here is where the value of correctly fitted glasses plays an important part, for it can be seen that they relieve all unnecessary strain and at the same time help to strengthen the eyes.

To me this seems to be an interesting subject and one that is worthy of investigation.

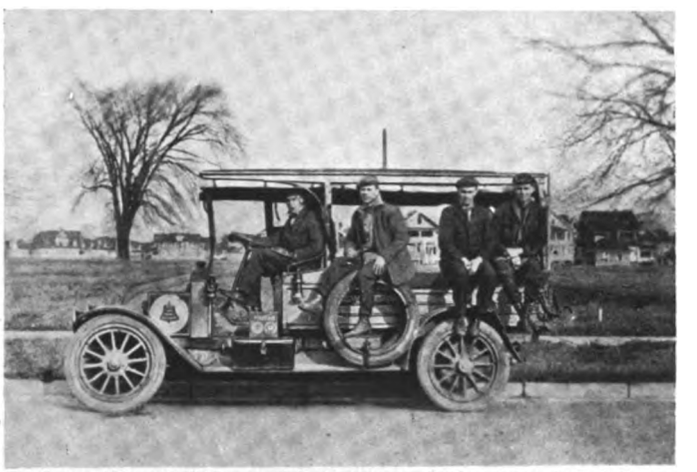
"First Aid" By Rochester Plant Men

By J. H. Brereton

Supervising Foreman, Rochester Plant Department

ON the morning of September 27, Truck No. 85 in charge of A. LeBaron, who was accompanied by F. J. Yawman, S. Harris, and J. J. Mullaney, was returning from Nunda to Rochester, some trouble work at the former place having just been completed.

While stopping in Avon for gasoline and oil, the men were told of a big fire about three miles east of the town. Their route took them through East Avon and when they reached this point, they could see smoke and flames, and being attracted by the apparent size of the fire, they decided to satisfy their curiosity and see it. When they arrived, they found a large house and barn in flames, and as no attempt was being made to save any of the contents of the house, the boys pitched in and succeeded in saving practically all the furniture and clothing. Their arrival on the scene was very timely, for in about twenty minutes the house and barn were burned to the ground.



The Latest "First Aid" Heroes of the Company. Left to right: A. T. LeBaron, F. J. Yawman, J. J. Mullaney, S. Hain

The same accident which started the fire, also caused very painful injuries to the owner. He was tarring the barn roof and his tar kettle caught fire and in trying to put it out, he upset it and set fire to the roof, also spilling considerable tar on his face and arms.

After doing all that was possible in rescuing the contents of the house, the boys gave "First Aid" to the owner by getting some gasoline from a nearby car and washing off the tar. About this time a doctor arrived, who was on his way from Lima to Avon. He realized the seriousness of the burns and not having any remedies with him, volunteered to go to Avon and return immediately with the necessary articles. The boys offered their "First Aid Kit," which he readily accepted, and with one of our boys as a helper removed the blistered skin with the shears and applied petrolatum and bandaged the face and hands and placed one arm in a sling. While doing this he was high in his praise of the completeness of our "Kit."

During this time the other boys were occupied in reviving a neighbor who was overcome with smoke. The ammonia vaporoles soon accomplished this, and dressing a few minor burns which other members of the family received, completed the "First Aid" work.

The boys found a gold watch and a pocketbook and some other valuables which were turned over to the owner's daughter, and as there was nothing more to do proceeded to Rochester.

Avon and vicinity seems a fertile field for "First Aid" work. A short time ago, a splicing gang consisting of S. Bruce, S. Rainey, J. Sherrill, and H. F. Buckley were working in Avon on Genesee street, and by stopping a runaway horse and giving "First Aid" to a young lady, who was thrown out, received the thanks of her parents and all witnesses.

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Telephone Pioneers of America

Sixth Annual Convention

ABOUT ninety Telephone Pioneers and members of their families from New York, New England, and Canada, assembled at the Pennsylvania Terminal in New York City on October 25 and boarded a special train de luxe for Atlanta to attend the Sixth Annual Convention of the Telephone Pioneers of America, scheduled to meet in that hospitable Southern city on the twenty-seventh and twenty-eighth.

The train left at 5.40 P.M., and stops were made at Newark, Philadelphia, Baltimore, Washington, and Richmond, where local Pioneers were waiting to join the festive party. At Richmond two men waited up until 2.45 A.M., so as to travel with the main party. The experience of each year has shown that the informality and good-fellowship among scores of Pioneers on these special trains to the conventions have contributed largely to the intimate acquaintanceship and enjoyment afforded by the conventions themselves. Dignity and diffidence impose no restraint where the social features predominate, and the democracy of the Bell organization when at play shows how sincere is the mutual regard and friendliness between officials and subordinates of the companies when at work.

Upon arriving in Atlanta at 9 P.M., the party, numbering 106 souls, was met by the Welcoming Committee of the Southern Bell, comprising almost everybody in the telephone service in Atlanta and a representative part of the other citizens. Here they were merged with Pioneers from all other parts of the country, to all of whom the gates of the city were opened wide, and where for two days a little business and much pleasure occupied them.

Morning Session Opens

THE headquarters of the Pioneers were the Piedmont Hotel. After registration the Pioneers were given an informal "at home," and the next morning at 9.30 o'clock the convention was formally opened. The president, Mr. Theodore N. Vail, and Dr. Alexander Graham Bell both expected to be present, but were unavoidably prevented. The vice-president, Mr. Thomas D. Lockwood, presided.

After expressing Mr. Vail's regret over his absence, Mr. Lockwood introduced the Mayor of Atlanta, the Hon. James G. Woodward, who welcomed the Pioneers to the city.

Welcome by Mayor Woodward

In his remarks Mayor Woodward said:

It is quite a pleasure to me to extend the official welcome of this city to this most splendid audience. It is very seldom that mayors have the opportunity of extending a welcome to an organization of such wide scope, as this covers the entire American soil. The very name of your organization means that you are together from long service, affiliation and association that have been pleasant, and it is keeping you ever mindful of it by the formation of this Pioneers' Association.

It has been my pleasure to be in close contact for the last twenty-five, nearly thirty, years with the head of the telephone companies in this part of the country, and those associations have been good for the community and the upbuilding not only of telephones, but of the electrical business.

Souvenir at the Banquet of the Pioneers in Atlanta

Mayor Woodward then paid a tribute to Mr. W. T. Gentry, president of the Southern Bell, who had been ill and, contrary to the advice of his physicians, had left his sick-bed to attend this opening meeting. When he arrived, Mr. Gentry was greeted with cheers and Mayor Woodward's allusions to him received great applause. Continuing, the Mayor said:

Those that have built up the telephone business, those that are building it up and holding it together to-day, feel a pride, a conscious pride, in the work and in the associations they have enjoyed during all these long years.

Mayor Woodward concluded with a benediction, saying:

May the good Lord, who looks over all of you, when the deliberations of this body are completed carry you safely back to the very distant homes of many of you (as your organization covers the entire continent), and may you find those you love enjoying good health and prosperity.

Mr. Lockwood expressed the appreciation of the Pioneers for the very gracious welcome of the Mayor, and next introduced Mr. J. Epps Brown, first vice-president of the Southern Bell, who welcomed the Pioneers on behalf of that company.

Officers for Next Year

The convention then disposed of the regular order of business. Under the head of miscellaneous business, a Resolution was adopted requesting the Executive Committee to take into consideration the feasibility of a life membership fee and, if approved, to submit an amendment to the constitution to be acted upon at the next meeting of the society.

The officers chosen for the following year are: President, Mr. Theodore N. Vail; Vice-Presidents, Mr. Thomas D. Lockwood, Mr. Edgar F. Sherwood, Mr. James T. Moran, and Mr. Ben S. Read; Treasurer, Mr. George D. Milne. Executive Committee: Mr. Frank A. Pickernell, Mr. Richard T. McComas, Mr. Albert Lincoln Salt, Mr. James Robb, and Mr. Charles H. Wilson.

The meeting then adjourned for luncheon. The ladies were entertained at the Piedmont Driving Club by Mrs. William T. Gentry, while the men were the guests of the various city clubs.

The afternoon session was devoted, as usual, to the reading of papers. The first paper was by Mr. L. B. McFarlane, President of the Bell Telephone Company of Canada. The subject of Mr. McFarlane's paper is "Telephone Pioneering in Canada."

Mr. L. B. McFarlane's Paper

MR. McFARLANE stated:

The first telephone contract secured [in Canada] was taken at Hamilton, Ont., the eighteenth of October, 1877, and the line, forming part of the Local District Telegraph call system, was equipped with six telephones and first tested on the twenty-ninth of August, 1877. The press of the day announced that this was the first instance in which more than two telephones had been operated satisfactorily on one circuit.

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The first telephone exchange in Canada, and the second in the world, said Mr. McFarlane, was established by the Hamilton District Telegraph Company on its call box circuits. The license to operate was granted on the twenty-eighth of May, 1877, and the first line opened on the eighteenth of October, 1877. The first long distance line test in Canada was said by Mr. McFarlane to have taken place in 1876, when Professor Bell applied to the Dominion Telegraph Company for a permit to test his embryo telephone on its telegraph line between Paris and Brantford. This led to the Dominion Telegraph Company acquiring a license for a period of five years from the eighteenth of February, 1879.

Other valuable and interesting data and many sidelights on the trials and tribulations of the telephone in its early struggles were embodied in Mr. McFarlane's paper. One incident that might be cited in illustration of this was his account of the introduction of the telephone into Newfoundland. Patents were secured in Newfoundland and application made to the local government for a charter to operate. This was opposed by the Anglo-American Telegraph Company, which claimed exclusive rights under a fifty-year telegraph agreement. The matter was finally adjusted by the Bell representative's selling the use of the patent to the Anglo-American Company on a royalty basis. Mr. McFarlane said:

> When the Manager of the Anglo-American Company was asked why he had opposed the introduction of the telephone, his explanation was unique. He said that from press reports and a chance remark of the Bell Company's representative, he had concluded that we had discovered a way to telephone across the ocean, and he thought this was the secret reason for taking out patents in such an out-of-the-way colony. He had cabled his views and conclusions to the London office and was promptly ordered to oppose our application at all costs.

The next paper was by Mr. F. H. Bethell, who was introduced by Mr. Lockwood as "The first vice-president of the New York Telephone Company, and president of more companies than I care to count on my fingers to-day."

Mr. F. H. Bethell's Paper

MR. BETHELL'S paper was devoted to a brief outline of the Chesapeake & Potomac Telephone Company, with special reference to the District of Columbia and the State of Maryland. "It was in 1877," said Mr. Bethell, "that Mr. George C. Maynard, fellow-Pioneer, and now curator of the Smithsonian Institute at Washington, D. C., began to construct private telephone lines in the District of Columbia." This was the beginning of the telephone business there.

IN THE DISTRICT OF COLUMBIA

On September 22, 1877, Mr. Maynard secured exclusive license for the District of Columbia and portions of Maryland adjacent thereto, and in 1879 Mr. Maynard and Mr. William H. Barnard, styling themselves the "National Telephonic Exchange," acquired the right to do a telephone exchange business in the District.

The first central office in Washington was opened December, 1878, with fifty subscribers. "Troubles commenced practically with the opening of the exchange," said Mr. Bethell. It was found that a great increase in the number of calls made the expenses of the company larger than had been anticipated, and so it was proposed to the subscribers that the company would "keep an account of the daily connections made, and give better facilities to those doing the largest business and charge rental for these improved facilities in proportion to the use made by the subscribers of the exchange."

Here, it is the belief of Mr. Bethell, was the measured rate first attempted.

The public, however, did not understand it and rebelled. At a mass meeting of subscribers "it was agreed that each subscriber should on a given day insert the grounding plug into the lightning arrester, with the result that when that day arrived, every telephone in Washington was put out of service. For two full weeks all telephones were quiet along the Potomac, when the management surrendered and the service was, on the subscribers' own terms, resumed."

This was the first successful attempt in settling (amicably) disputes with subscribers' protective associations.

The third matter in which Mr. Bethell claims for Washington the distinction of being first was in the introduction of retrenchment policies. A new president elected in 1882 found the Company unpopular, heavily in debt, and without funds. He reduced the total force from fifty-four persons to twenty-five, and otherwise introduced efficiency and economy as they were known in those days.

Washington was also first in meeting and turning back proposed duplication. The contest between the Western Union Telegraph Company and the Bell interests having been settled, a local company sought the right to do business in Washington in the early '90s, but came to nothing. The Hon. John W. Ross, President, Board of Commissioners, District of Columbia, in a letter to the Hon. James McMillan, Chairman Senate Committee on the District of Columbia, dated January 4, 1896, made a report in which he said:

> The public convenience in the matter of telephone service requires that each owner or lessee of a telephone should be able, through a central office, to communicate with every other owner or lessee of a telephone in a district.
>
> This indispensable condition of a perfect telephone service creates a monopoly by making it impracticable for but one telephone company to occupy the public streets.

President Ross's letter concluded as follows:

> If Congress deems it necessary to have a more extended and efficient service, or a more economical one, than the existing Company furnishes, the Commissioners believe that can better be accomplished by regulating the conditions under which that Company shall operate, than by chartering a new Company.

So far as Mr. Bethell knows, this was the first suggestion of regulation of public utilities, and this is the fifth matter in which Washington has the distinction of being first.

IN BALTIMORE

The telephone in Baltimore began with its introduction in 1878 when Mr. John Henry C. Watts took out a Bell license covering the right to do a telephone business in and about Baltimore city. The first company was known as the Maryland Telephone Company of Baltimore city, and the first telephone exchange was opened on January 1, 1879. In 1883 the Chesapeake & Potomac Telephone Company acquired by purchase the exclusive right to conduct a telephone business both in the District of Columbia and in the State of Maryland, and in September of that year found itself swamped with business and had to refuse to accept more, in the cities of Baltimore and Washington, until new switchboards could be delivered and installed. This was done the following year. Difficulties of all kinds were encountered, from the placing of telephone lines underground to the exactions imposed by local and national legislation affecting the business in Maryland and the District of Columbia, respectively. But on June 20, 1902, Congress passed an act, "An enabling act, which took the fetters off, thus permitting the unrestricted building of property and extending of service."

With the passage on April 24, 1904, by Congress of what was known as the Repealer Act, the company was freed for the first time in twenty-four years and started with a rush upon a career which as Mr. Bethell said, "must command the admiration of all of you."

Mr. Bethell traced the problems and growth of the company of which he was formerly general manager and is now president, bringing the account in a most lucid and interesting way up to the present date.

BALTIMORE FIRE

In his account of the disastrous fire in Baltimore which started on February 7, 1904, Mr. Bethell described the remarkable heroism and work of the operators and all other employees of the company, and said that on the same day that ten companies of fire fighters came from New York to assist in subduing the flames, there also arrived in Baltimore the first shipment of telephone material

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THE LADIES OF THE PARTY WERE GIVEN A LUNCHEON BY MRS. WILLIAM T. GENTRY

necessary for the restoration of our service. The service was completely restored before the end of the month and before the last sparks of the fire had died away.

Mr. Charles E. Scribner's Paper

A PAPER on "The Genesis of the Multiple Telephone Switchboard," prepared by Mr. Charles E. Scribner, chief engineer of the Western Electric Company, who was unable to be present, was read by Mr. Kendall Weisiger. "The telephone was placed on the market in 1877," wrote Mr. Scribner, "commercial telephone exchange service established January 28, 1878, and the first multiple switchboard installed in January, 1879, in the 'Edison' Telephone Exchange of the American District Telegraph Co., at 118 LaSalle street, Chicago.

"Back of these developments there are many stories of inventions and achievements, which, at the time and under the circumstances and the state of the electrical art then existing were, and now are, justly considered marvelous. It is instructive to look back from the present time, and with our advanced practical and scientific training, observe with what swiftness and directness the problems as they presented themselves were worked out and how logical were the steps taken to meet requirements."

Mr. Scribner then gave a short review of the early conditions so as to bring out clearly the situation which demanded the multiple switchboard, with which Mr. Scribner personally had much to do, saw the early apparatus constructed and installed, and witnessed its successful operation.

Mr. Leroy B. Firman, the general manager of the "Edison" Exchange in Chicago, was responsible for the multiple switchboard idea that proved successful. Mr. Scribner said in his paper: "His plan was to provide duplicate switchboards, on each of which all of the telephone lines would appear so that any two lines might be connected together

OFFICIAL PHOTOGRAPH OF THE TELEPHONE PIONEERS OF AMERICA TAKEN AT

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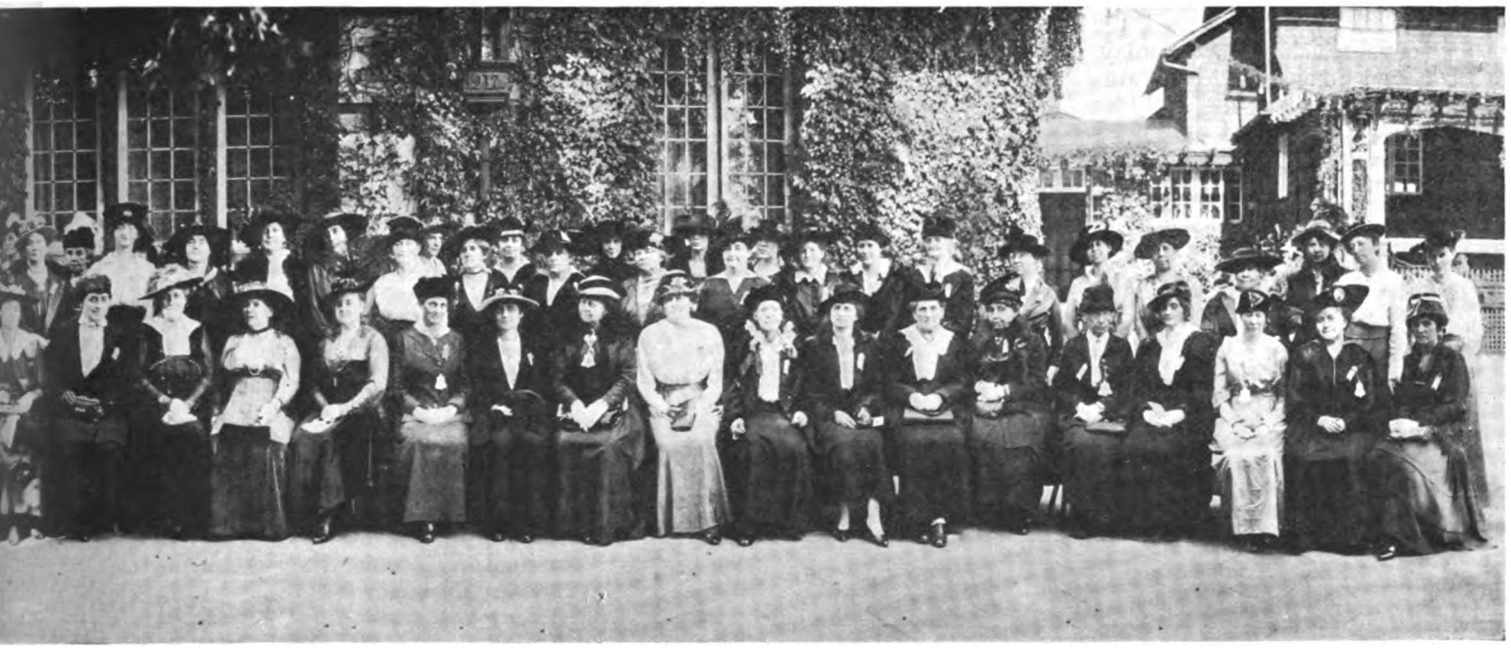

THE PIEDMONT DRIVING CLUB. TELEPHONE PIONEERS CONVENTION, ATLANTA, 1916

on either of the boards. This was the broad invention of the multiple switchboard, and Mr. Firman is entitled to full credit for pointing out the way to unlimited extension of the telephone exchange systems."

At the suggestion of Mr. E. M. Barton, Mr. Firman later secured a patent which was sold by him to the Western Electric Company.

The tremendous advances which have been made in switchboards since that time were described in detail by Mr. Scribner and his paper doubtless will become one of the most important contributions to the literature of the telephone.

Mr. F. A. Pickernell's Paper

MR. LOCKWOOD then read a paper on the introduction of the Composite system, prepared by Mr. F. A. Pickernell, with an interpolation by Mr. Lockwood himself.

Prior to 1890 it had been impossible to use a single wire for telephonic and telegraphic transmission simultaneously, but in this year the American Telephone and Telegraph Company experimented with the Van Rysselbergh System of Simultaneous Telephony and Telegraphy. The experiments were conducted by Mr. Pickernell, who installed the new system over A. T. & T. lines between New York and Boston. Very satisfactory results were being obtained, with a promise of great development.

On April 3, 1891, while Mr. Pickernell was in Boston, the main line between Boston and New York was wrecked by a sleet storm. No one in New York was familiar with the Van Rysselbergh System, but a circuit drawing was made and Mr. Pickernell transmitted it by telephone over the newly constructed shore line, which was intact, to Mr. A. S. Williams, his assistant in New York, and the necessary apparatus was arranged for. New York was supplied with equipment and enough for Boston was carried as baggage to that city by Mr. G. L.

BARBECUE AT THE DRUID HILLS COUNTRY CLUB, ATLANTA, OCTOBER 28, 1916

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Betts, chief clerk to Mr. Pickernell, the following day, which was Saturday. That night and Sunday the apparatus was installed on both ends and ready for operation on Monday morning on nineteen lines, one condenser having been found defective. Thus was the situation saved.

As the apparatus became standardized, it was desirable to get a better name, and the honor of selecting it was conferred upon Mr. Lockwood, who chose the appropriate designation, "Composite."

The Banquet

AT the conclusion of the reading of the papers, it was announced that the Pioneers would be given a banquet that evening in the Piedmont Hotel by the American Telephone and Telegraph Company, and when the meeting adjourned at five o'clock, everyone scurried away to dress for this function, which always is one of the best features of the annual gatherings.

A stage had been constructed on one side of the hall and during the course of the dinner music and entertainment were provided by Bell System talent equal to any high priced cabaret performers. The erstwhile presiding officer of the convention and present toastmaster, Mr. Lockwood, was taken by surprise when called upon to accept a token of appreciation which his loyal and devoted friends wished to present. It consisted of a bale of cotton, and as Mr. Lockwood saw it hoisted to the platform and realized the present market price of one of the staple products of the South, no doubt the high cost of living lost its terrors to him for awhile. But it would be hard to tell what his thoughts were when from out the bale tripped upon light fantastic toes a gauzily clad young lady. What he did was gallantly to seize her around the waist and kiss her ruby lips. Ownership of the bale of cotton vanished, but the possession of that kiss—never!

After dinner speeches were made by Mr. N. T. Guernsey, general counsel American Telephone and Telegraph Company, Hon. Murphey Candler, chairman of the Georgia Railroad Commission, Mr. F. H. Bethell, Mr. L. B. McFarlane, Judge H. E. W. Palmer, and Hon. Clark Howell, editor and owner of the Atlanta *Constitution*.

The banquet and speeches lasted until about midnight when the floor was cleared for dancing which continued almost till breakfast time.

The Souvenir

THE souvenir presented by the American Telephone and Telegraph Company at the banquet possesses unusual intrinsic and sentimental value. It was a medallion nearly three inches in diameter, made from the first metallic copper telephone circuit used on the New York and Boston line, which was built in 1884, and in continuous service until 1916 when a portion was taken down and made into these medallions.

Saturday morning the Pioneers were left to their own devices to enable them to recuperate from the strenuous day and night preceding and to prepare for an old-fashioned Southern Barbecue at the Druid Hills Golf Club scheduled for one o'clock.

An automobile ride in the afternoon wound up the day, and the evening was spent at dinner parties, theaters, and clubs.

Returning Home

THE members of the special train party from New York sought their berths that night and were leaving behind them the scenes and incidents of the 1916 convention before they woke up next morning.

A stop was made at Chattanooga, where the party was met by automobiles and given a ride to the Chickamauga battlefield, Missionary Ridge, Lookout Mountain, and other points of interest. Asheville was reached the next morning where Mike Erskine (he insisted upon being called "Mike"), the local representative of the Southern Bell, acted as cicerone during the stay of the party. Breakfast and luncheon were enjoyed in the midst of the beauties and splendors of the Grove Park Inn. After a sightseeing trip through the "Land of the Sky" the party left in the early afternoon, arriving in Washington Tuesday morning in time for breakfast. A tour of the city was made until 4 P.M., when the journey back to New York was resumed. The train arrived at the Pennsylvania Terminal on schedule time and the party disbanded for their respective homes.

Ma's Rich and Pa Don't Care

THIS term is slang, of course. It is used to justify an act or policy which involves an expenditure of what seems like waste of time and effort. Generally the responsibility for the act or policy in question is not directly "up" to the man who says or thinks, "Mamma's Rich and Papa Don't Care." And there is nothing very discreditable in an employee passing over something for which he is not responsible with such a remark. Often the seeming waste of money is really justified. Still, we all know that the reputation of the Company depends in no small degree upon appearances, and it is reasonable to assume that responsible employees in every department would be glad to know of those things which have the appearance of waste, even if they already know the conditions.

Take a case in point. Recently I stumbled over about a three-foot length of block cable and several yards of insulated wire in my own back yard. Cable and wire were of no value to me, because the quantity was too small. But query: Should not that cable and wire have gone to swell the Company's junk pile? I inquired of the proper official whether this was so. He said it was, and thanked me. Incidentally, he stated, that the total saving from recovered junk is very considerable. I had been tempted to throw the cable and wire away and be satisfied with the thought that "Mamma's Rich and Papa Don't Care," but I am glad I was not, for I learned some definite facts about a policy of the Company which tends to offset the present high prices of material.

Contributed.

ORGANIZATION CHANGES

Department of Buildings and Supplies

J. J. Jolliffe appointed building inspector, Lower Manhattan, comprising Broad, Gold, Cortlandt-Dey, Franklin, and Walker-Lispenard buildings.

C. Martin appointed building inspector, Central Manhattan; comprising Old Spring and Orchard on the south to and including Lenox and Cathedral on the north.

C. R. Dudley appointed building inspector, the Bronx, and Westchester, comprising Harlem and Morningside buildings on the south to and including the Westchester Division buildings now under the supervision of this department.

C. Montague, janitor of Cortlandt-Dey building, transferred to the Telephone and Telegraph building, as janitor.

Central Division

Plant Department

Martin Hooly, foreman, Watertown, N. Y., retired on pension.

Frank Pike, lineman, transferred to foreman at Watertown, N. Y., vice Mr. Hooly.

B. L. Weaver, deskman, Watertown, N. Y retired on pension.

Long Island Division

Plant Department

F. R. Blue, installation foreman, Glen Cove District, will take charge of Southampton District as district supervisor.

W. M. Hine, wire chief of Bay Shore, will report to Mr. Weeks for special work on all toll trunks to the Eastern District and local trunks in the Eastern District.

S. B. Thompson, wire chief of East New York, is appointed wire chief of Bay Shore.

T. Orr is appointed wire chief of East New York.

Mr. B. Scott, repair foreman, Melrose, calls attention to the following sound philosophy:

Don't look for flaws as you go through life
And even if you find them,
Be wise and kind and somewhat blind,
And look for the virtues behind them.

Selected.

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"Market 7000"

Bell Telephone Meets Needs of Public Service Corporation of New Jersey

By J. A. Tracy, Jr., Newark Local Commercial Office

The New Terminal Building in Newark of The Public Service Corporation of New Jersey

IN the City of Newark, where its Two Hundred and Fiftieth Anniversary was recently celebrated, events took place that will commemorate not only the wonderful progress and integrity of this large industrial center, but will reflect the spirit of honest effort of the people of the entire State of New Jersey. One of the most significant events, which occurred on the opening day of the celebration, was the opening of the new terminal and office building of the Public Service Corporation of New Jersey, an institution which stands among the foremost of efficient public utility companies in this country. This large terminal building was designed to afford the greatest convenience to the public by reducing the congestion of cars at Broad and Market streets, generally recognized as the second busiest "four-corners" in the United States and past which 520 cars were scheduled to move in one hour of the evening rush period.

The completion of this improvement is a fitting tribute to the success of the Public Service Corporation of New Jersey and its affiliated companies, namely, the Public Service Electric Company, Public Service Gas Company, and Public Service Railway Company, and reflects the policy of its organization to serve the public efficiently, a policy which has continued unswervingly since the formation of the Company over thirteen years ago. Without entering into any comparisons of the extent of its properties and services in 1903, the year of its incorporation, it may be remarked that the progress and growth of this Company can be appreciated only by those who have observed the conditions at the time of its formation. The properties then consisted of separate and to a large extent unrelated units, the new organization having taken over control of a number of companies, operating gas, electric, and railway properties, throughout the State. In the course of thirteen years the Public Service has so enlarged its usefulness as a utility that it now serves 216 municipalities in the State, or about 80 per cent. of the total population. The electric business of this corporation comes under the management of the Public Service Electric Company.

Electric

The electric plants of the company now number 19, the principal stations being Essex, Newark, Marion, Perth Amboy, Burlington, Camden, Trenton, Paterson, Cranford, Red Bank, and Edgewater,

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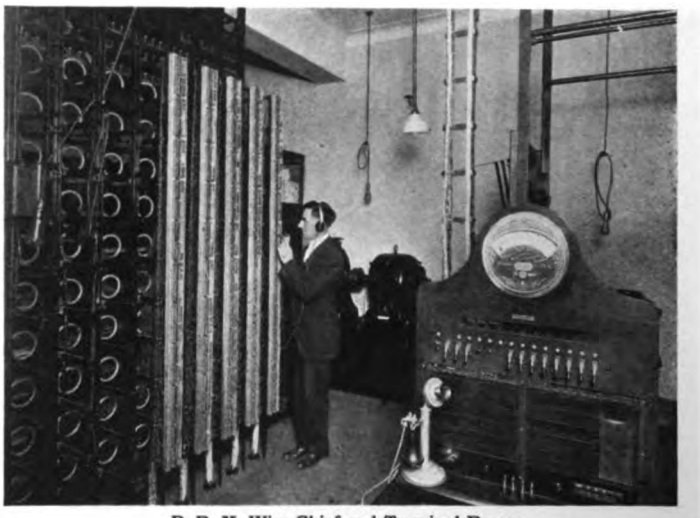
"Market 7000." Miss A. Lenz, Chief Operator, Seated at Desk

Rear View of Telephone Switchboard, "Market 7000," P. S. C. of N. J.



P. B. X. Wire Chief and Terminal Room

Supervising Foreman L. A. Good and Switchboard Wiremen and Installers of the New York Telephone Company, New Jersey Division, Who Installed the Telephone Equipment in the Public Service Terminal

which aggregate a total generating capacity of 227,813 K.W., supplying electric current for light, heat, and power to 124,433 customers with a connected load of 277,652 K.W. In addition, they furnish and light 24,803 street arc lamps and 13,878 incandescent street lamps. There are 74 substations located at various points throughout the State, which are connected by cables and transmission lines with the generating plants mentioned. The length of the transmission lines, in street miles, is 685, and the conduit system totals 139 street miles. There are 145,545 poles and 16,108 miles of wire.

To take care of this vast responsibility and to give the best service to the public and consumer, Public Service has felt it a duty to give the best skill possible to meet the demands placed upon it. The power stations, substations, and electrical operating system are to-day among the finest, and are proofs that the company uses every means to accomplish continuity of service and to prevent interruptions due to storms and other unforeseen causes.

Gas

The gas business is under the management of the Public Service Gas Company. The gas properties, while not comparable with the electric, in the number of plants, substations and transmission lines, are responsible for a much larger number of consumers, it being apparent that in cities many tenement and other houses have only gas service. The number of gas customers is approximately 500,000 throughout the State, using 11,231,828,000 cubic feet of gas a year. There are nearly 3,000 miles of gas mains in the State. The principal plants are located at Newark, West End (Jersey City), Paterson, Hoboken, Plainfield, New Brunswick, Trenton, and Camden.

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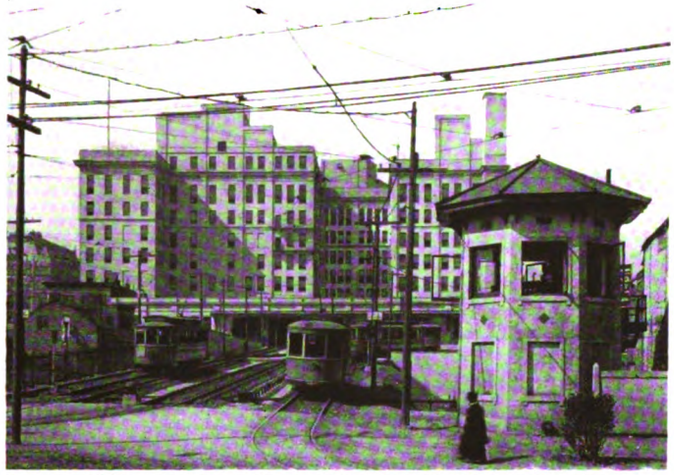
Railway

The railway system of the Public Service Railway Company is a net work of lines embracing almost all of the principal cities and towns of the State. Obviously the railway serves the largest number of people, every passenger being in fact, a customer, and for that reason every attention must be given to render the best service to the traveling public. To accomplish this, the railway officials are unceasingly studying traffic intricacies for improving the service, wherever possible. There are approximately 882 miles of track, including that used for car storage yards. There are, in operation, 1,654 closed cars and 435 open cars, and throughout the State, there are 101 individual lines of cars, of varying headways. The passengers carried averaged 1,135,403 per day, during the year 1915, 21½ per cent. using transfers. The Plank Road shops of the railway company equal the best equipped railway shops in the United States. A large number of cars now in service were built at these shops.



Operator of Telephone in Tower No. 3 P. S. C. of N. J. Operating Switches for Cars Approaching and Leaving Newark Terminal

A high speed interurban railway line is operated between Newark and Trenton with connections to Camden and Philadelphia. This line has been in service for the past three years, has been well patronized and is very popular with trolley tourists.

The railway company controls and operates the ferry service between Bergen Point and Staten Island, and between Edgewater and 130th street, New York.

A well organized Claim Department handles the accident cases and the application of methods to promote safety to persons and property. An efficient "Safety-First" branch does considerable work in this respect.

Commercial offices are located in the principal cities, such as Bayonne, Camden, Elizabeth, Englewood, Hoboken, Hackensack, Jersey City, New Brunswick, Newark, Montclair, Orange, Paterson, Passaic, Ridgewood, Rutherford, Trenton, and West New York, etc.

Attended Public Telephones on Concourse of Public Service Terminal Building

Bell Telephone

THE above outline will give an idea of the scope of Public Service in its capacity as a utility corporation. It may be interesting to the readers to know what facilities are provided by the telephone company to enable Public Service to transact the enormous business which must necessarily be handled promptly and accurately among its thousands of employees and with hundreds of thousands of patrons.

The Public Service Corporation and its allied interests have one of the largest and most comprehensive telephone systems in the country from the standpoint of equipment and wire mileage.

The area covered, number of switchboards, tie lines, central office trunks, outside extensions, and method of "tieing"

Typical Telephone Pole-Box Used by Railway Dept., P. S. C. of N. J.

Car on Loading Platform on Upper Level, Newark Terminal, P. S. C. Telephone Booth at Right

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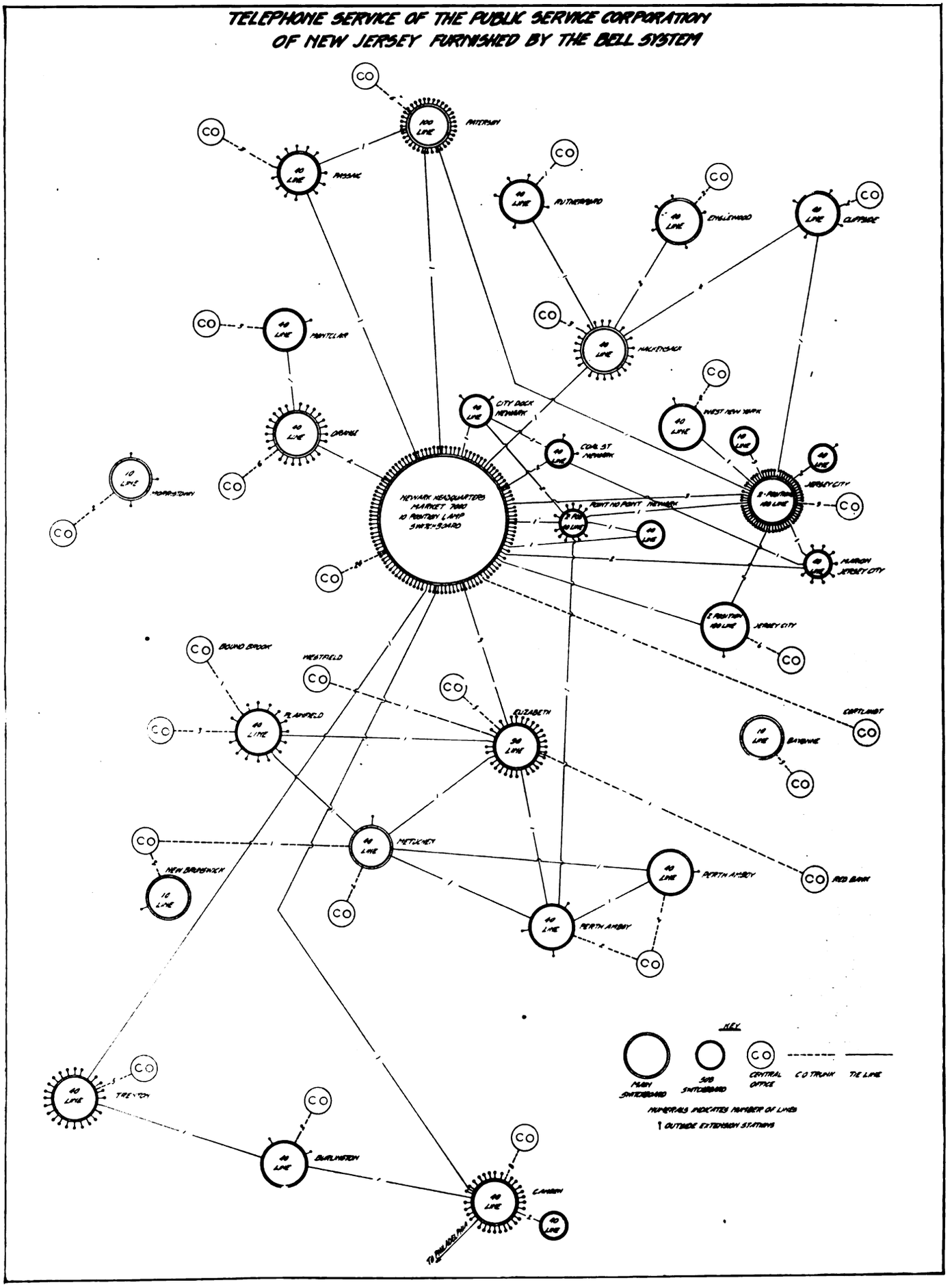

Diagram Showing Location and Extent of Bell Telephone Equipment Serving the Public Service Corporation of New Jersey

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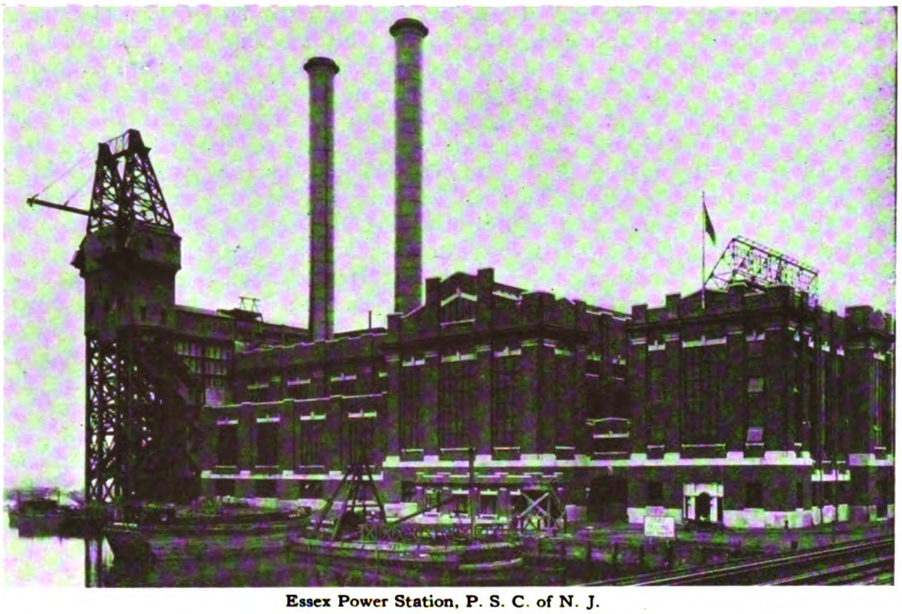
are shown by the plan on page 360. Approximately 22,000 telephone calls of all classes are handled on a typical business day, divided as follows: 67 per cent. between their own offices, 19 per cent. coming from the public, and 14 per cent. outgoing to the public. The total number of outgoing messages from the various switchboards during 1915 was 631,247, and the incoming is estimated at 1,000,000. Forty-nine Public Service telephone operators are employed to handle this business and all the general exchanges are operated twenty-four hours each day.

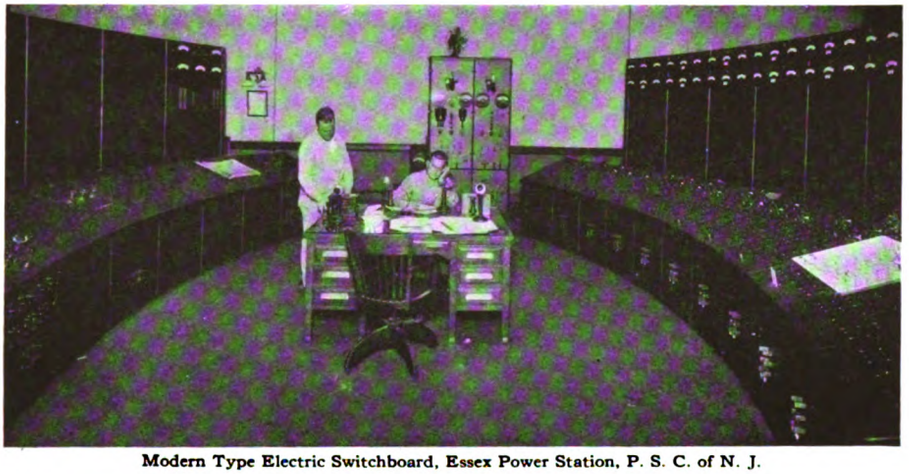
Essex Power Station

Many of the electrical features in the new Essex Power Station, one of the largest electrical generating stations in the United States, are the result of special studies by its Engineering Department to meet conditionsencountered in the field of Public Service and have proven a success since the starting of the station.

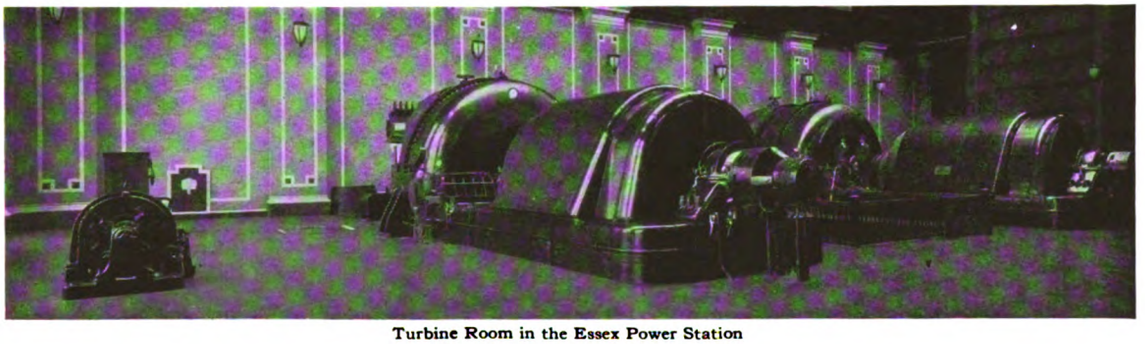
This station contains two telephone sub-switchboards to Market 7000; one, located in the load dispatcher's room, a two-position board with 10 outside stations to various substations on a party line basis, and 6 inside; the other is a single position in the general office with 8 inside stations. Two generating stations in the Essex Division are equipped with sub-switchboards to Market 7000, viz.: Coal street, a single-position with 2 stations outside and 4 inside; City Dock, a single-position with 2 stations inside and 1 outside; none of these switchboards has central office connections, and each is inter-connected with main switchboard by tie lines.



Essex Power Station, P. S. C. of N. J.



Modern Type Electric Switchboard, Essex Power Station, P. S. C. of N. J.



Turbine Room in the Essex Power Station

Load Dispatching by Telephone

The telephone system here is used principally for load-dispatching work. Circuits are run from the switchboards to the various substations in each division, the majority of which are on party line basis, code ringing being used. The electrical operators in these substations receive all their instructions for opening and closing switches on the various cables and transmission lines from the load dispatcher at each dispatching center who supervises by telephone the power distributed to his various substations, and the substations in turn are in a position to report any trouble; these substations are so located and arranged that a load may be transferred from one substation to another should one go out of service for any reason. It can be appreciated how essential it is that telephone as well as power service be kept "up to the minute" in order to avoid interruptions or delays to its various services. Other dispatching centers are located at Marion, Perth Amboy and Burlington, these three points, with Essex Station, representing the four most important points of the Electric Company in the operation of its business.

The entire telephone system of the Company as shown by the plan, comprises 23 main and 8 sub-switchboards, 60 tie lines, 109 central office trunks and 1,001 extension stations, 617 of which are inside and 384 outside. Tie line mileage totals 497, extension line 632¾, and there are 23,015 feet of miscellaneous submarine. In addition, there are 241

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stations connected direct to the various central offices of the telephone company, 36 of which are extension stations; these are located at various points throughout the system, such as duplicates to switchboard extensions for emergency in substations, gas plants, etc., and as company service in residences of officers and employees. Such service is not designated in the plan on page 360.

The Hub

The "hub" of this great system is at Headquarters, Market 7000, in the new Terminal Building on Park Place, Newark, where we recently installed a No. 10 lamp switchboard with 8 working positions at present, mainly for executive supervision.

The Operating and Terminal Rooms are located in almost the exact center of the building, on the fifth floor.

The switchboard consists of ten single-position sections of No. 10 lamp signal private branch exchange multiple switchboard, having a capacity of 960 lines of all kinds and a present equipment of 440. Sufficient space has been reserved for three additional one-position sections to take care of anticipated future growth. The method of operation is similar to that employed with any common battery switchboard, excepting that straight ringing is used on all lines, as there are no selective party lines. Lamp signals are used for line and supervisory signaling throughout the switchboard.

The switchboard equipment is almost entirely self-contained, the relays, repeating coils, and fuses being mounted in the interior of the framework. There is no intermediate distributing frame and no cross-connections are made between the multiple and answering jacks. These were cabled permanently when the switchboard was installed as in all equipments of this type. Answering jacks on trunks to the Market central office, and tie lines to other private branch exchanges in the Public Service telephone system, are located at the left-hand end of the switchboard, at positions Nos. 1, 2, and 3. Extension line answering jacks are located in front of positions Nos. 4 to 8, inclusive. The extreme left and right-hand end positions, Nos. 0 and 9, are unequipped.

A complete power plant equipment, consisting of storage battery, charging motor, generator, and ringing machine units, has been provided capable of supplying the maximum needs of the plant. The storage battery is of the chloride accumulator type, eleven cells, type F-15, with an ampere hour capacity of 560. This is ample for present needs, and for the future, as the load on the battery is less than one-quarter of the charging rate, and the battery is charged for a few hours every other day. The ringing motor generator set is intended only for emergency use, as the regular supply of ringing current is obtained from the Market central office. The charging motor generator set is of sufficient size to charge the battery at the regular rate and at the same time carry a heavy operating load. Current for the ringing and charging motor is supplied from the Public Service Company's mains in the building.

A wire chief's desk of the No. 10 type is located in the Terminal Room, and a No. 10 type chief operator's desk is in the Operating Room. The terminal equipment consists of a main distributing frame in the Terminal Room, having a capacity of 616 feeder cable conductors on the vertical side and 1,400 switchboard lines on the horizontal side. There are at present 800 cable feeder pairs and 620 switchboard circuits terminated on this frame.

A total of 437 stations are connected to this board, 110 of which are outside, and the inside stations totaling 327 are located in various offices throughout the building which occupy eight floors; the outside stations are located in various carbarns, offices, storehouses, gas plants, and in pole signal boxes used by the railway company for emergency and dispatching. Twenty-four Market central office trunks connect this board with our system, with one foreign central office trunk to Cortlandt in New York City; it has four sub-switchboards connected by 11 tie lines and 15 tie lines to other switchboards, the longest of which is to Camden.

Considerable dispatching is carried on by telephone throughout the terminal, several extension stations from Market 7000 being located in towers; in fact all dispatching throughout the system is carried on by telephone at the various carbarns and important terminals; 1,978 cars leave and arrive at the terminal on a typical business day and approximately 39,086 people.

The concourse contains ticket office, public telephones both attended and non-attended, restaurant, shoe shining parlors, soda counters, and several other lines of business. To the right on the concourse, is the commerical office and display room of the company where contracts and collections are handled, and gas and electrical appliances exhibited, demonstrated, and sold.

Wanted Carfare Sent by Telephone

AFTER talking a few minutes to a Schuyler party a patron calling from a Cortlandt coin box telephone signaled for the operator and said, "Operator, here goes a dime. (At the same time depositing the dime.) Did you get it?"

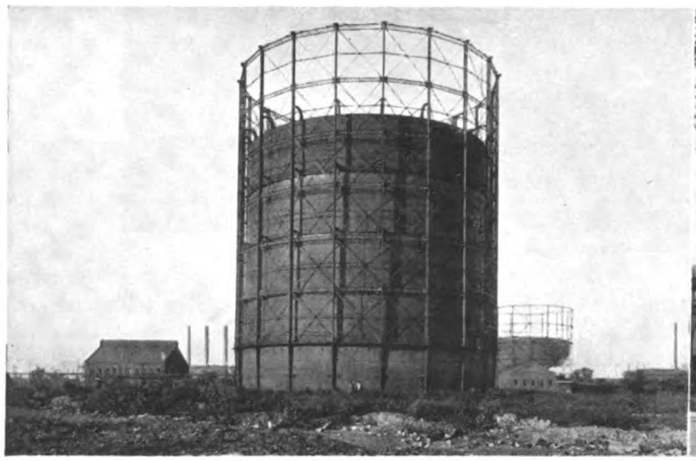
Operator, "Yes, sir."

Patron. "Now give it to the party at the other end." Not waiting for the operator to answer he continued his conversation. "Now you have your carfare, meet me at Riker's."

The operator said, "I am sorry, but I cannot give the coin to the party at the other end," and returned his coin.

The patron was angry because the money could not be given the Schuyler party.

LENA BEISLER,
Cortlandt Senior Operator.



West End Gas Works, Jersey City

Elizabeth Electric Substation

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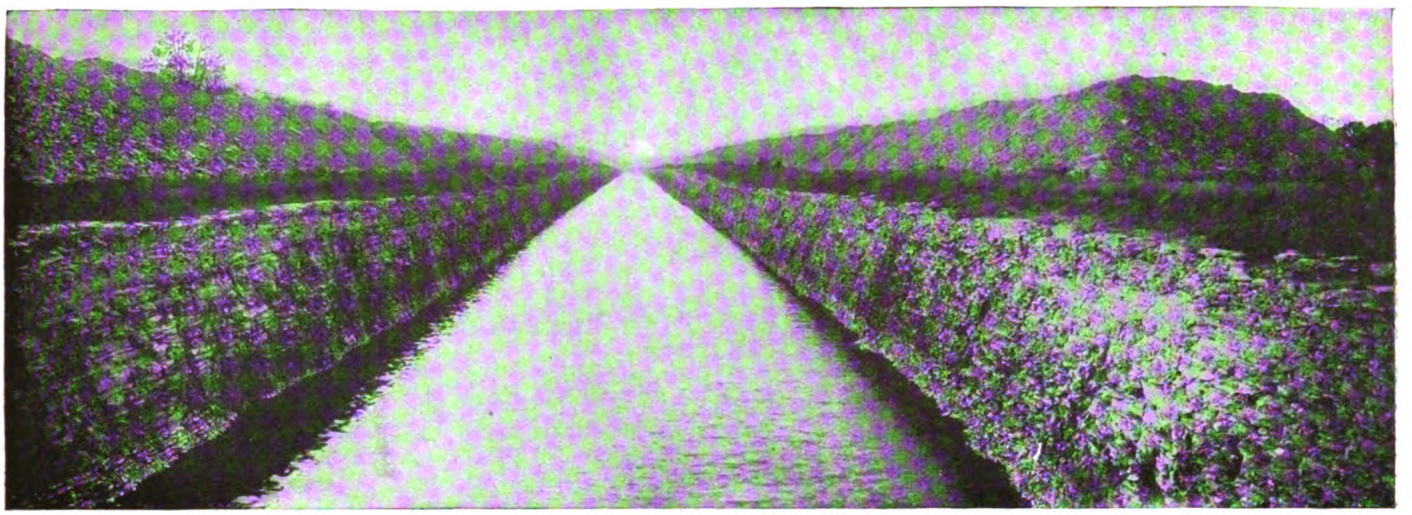
The New York State Barge Canal

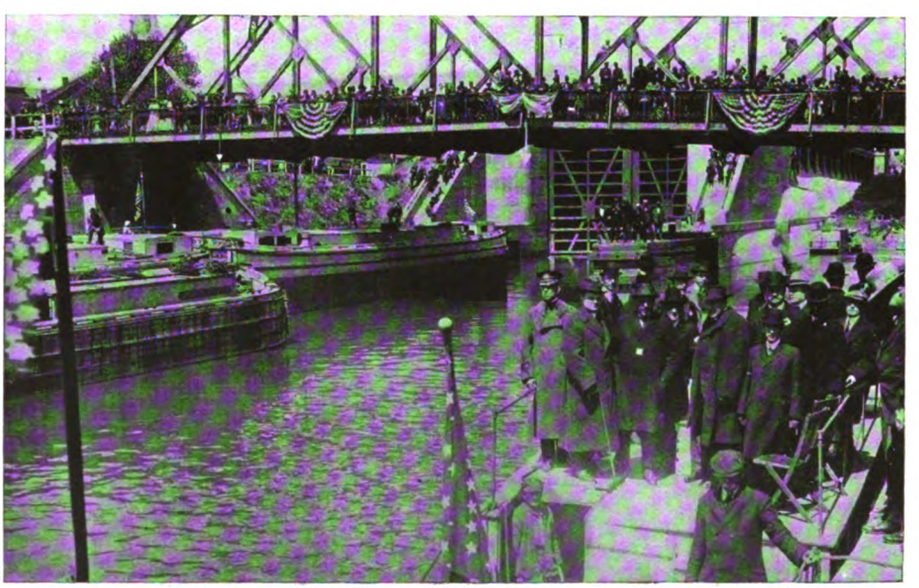
By W. B. Eddy, Special Agent, Albany



New Barge Canal. Rock Cut West of Rochester

THE telephone is the pulse of progress. It is a sure indicator of industrial health, or the reverse. According as the growth is normal, or rapid, or below par, the community is pretty sure to be either normal or thriving or stagnating. In "sizing up" a town the telephone growth may well be consulted as an index of its industrial temper. Like the pulse, however, it registers a condition which exists and is not a prophecy of more than the near future. The Telephone Company, therefore, has to make its own prophecies, to provide the facilities when and where they will be needed for the conditions as they arise. To do this is a scientific study and the estimates are made by engineers who have worked out the relationships of hundreds of details.

Once in a great while, however, something is undertaken which materially affects the growth of some particular section to such a degree that its results can be discerned far ahead of the event. The building of the New York State Barge Canal is an example of this rare and stupendous sort of improvement which casts its shadow far in advance, for the layman as well as the telephone engineering expert to see. The time is over, we had thought, for the opening up of new country by routes of transportation, yet something the same effect is anticipated from the opening of the Barge Canal, affording as it will a new and low-priced freight route from the Great Lake region and Central New York to the Hudson and the port of New York. The necessity of having a practicable water route from the Great Lakes to the Hudson was felt in the earliest days of the nation's history, and the completion of the Erie Canal supplied the need admirably for that day, promoting the growth of Western New York and the Middle West to an incalculable degree. For the present proportions of the commerce that seeks an outlet from this district to the sea, the Erie and its contributory canals have for many years been inadequate. The story of the Barge Canal which is now nearing completion after an expenditure of approximately $150,000,000, shows how amply the new water route is prepared to take care of an increasing volume of freight in this least expensive method of transportation. Added facilities are the forerunners of added demands, and a very marked increased activity may be looked for in the towns along the Barge Canal system and the adjacent territory when the Canal is finally opened.



Official Opening of Waterford-Schenectady Section of New Barge Canal by Governor Whitman

That this anticipated commercial growth will mean a corresponding increase in the use of the telephone throughout this section is apparent, and something of the probable extent of the impetus which the Canal may be expected to afford may be gathered from the account of the great Canal and the problems of its building.

In January, 1915, it was written of the Panama Canal that "the Canal was begun nine years ago and has cost $310,000,000; within the same space of time the Bell System has spent twice that amount in its engineering construction work alone." But at the same time that this world-used Canal was being

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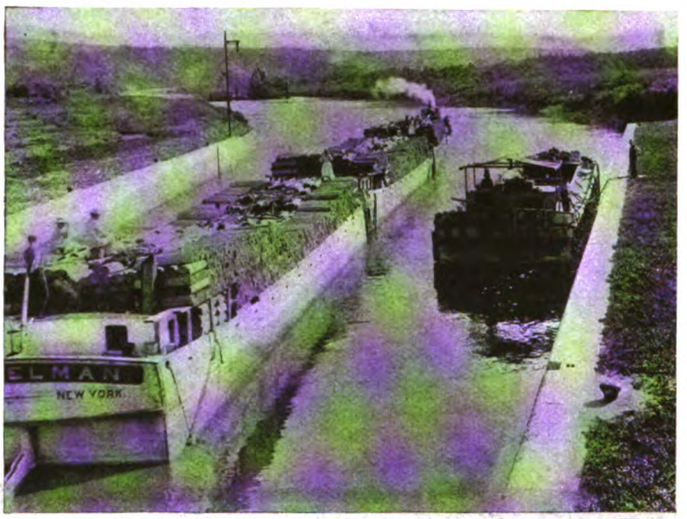
Siphon Lock at Oswego, N. Y.

completed, and the engineers of the Bell System were binding the nation together with the Transcontinental Line, the Barge Canal was being constructed, opening up new trade facilities to millions of people—over eight million reside within five miles of the banks of the Barge Canal itself—and preparing the way for still increasing telephone opportunities.

THE Barge Canal is the enlargement of the Erie, Oswego, Champlain, and Cayuga-Seneca Canals, which have contributed so much to the prosperity of New York and the other States bordering on the Great Lakes.

The Erie Canal extends from the Hudson River at Troy to Lake Erie at Buffalo. The Oswego Canal leaves the Erie at a point half way across the State and reaches Lake Ontario at Oswego. The Cayuga-Seneca Canal branches from the Erie just west of the junction of the Oswego and Erie Canals and connects Cayuga and Seneca Lakes with the Erie Canal. The Champlain Canal extends along the easterly boundary of the State, north to Whitehall, which is at the southern end of Lake Champlain.

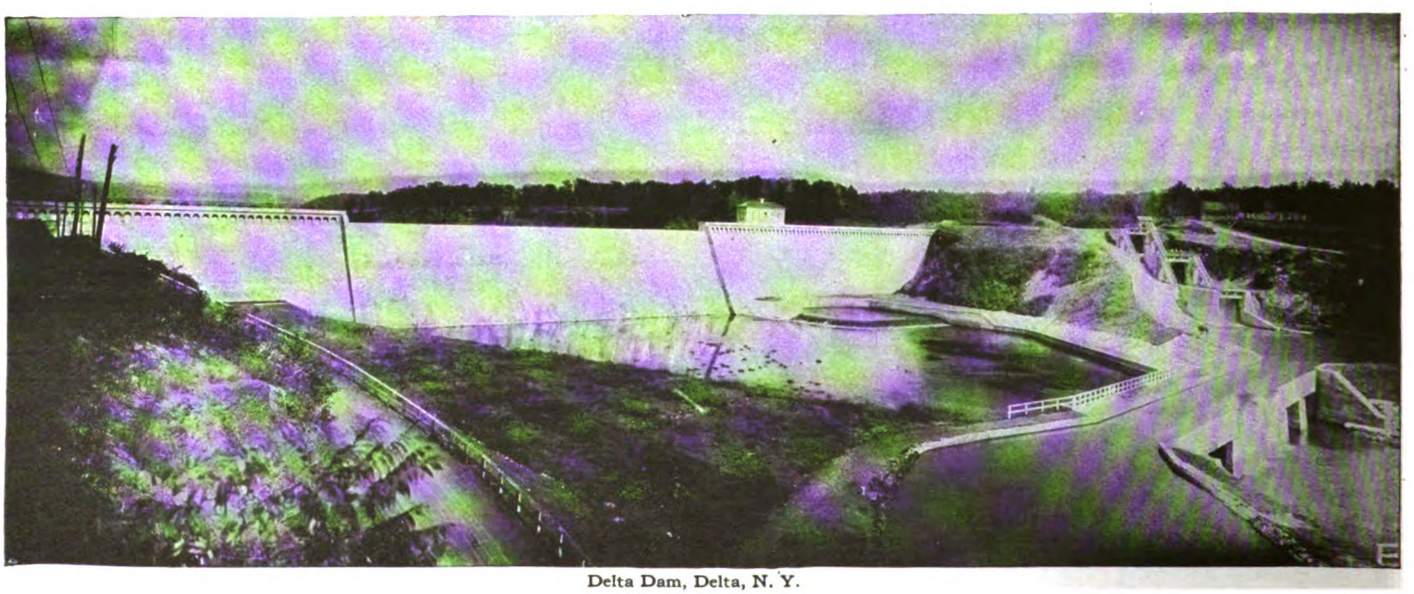


Champlain Division. Steamer and Barges Leaving Locks at Fort Ann, N. Y.

A minimum depth of twelve feet of water will be maintained throughout the Barge Canal. The width of channel on the restricted "land lines" will be seventy-five feet at bottom of prism, with the width of water surface varying according to the class of material encountered in the excavation. The average width of channel provided on the river sections, which comprise about seventy per cent., will be two hundred feet.

The locks are forty-five feet wide, and have a usable length of 310 feet. The bridges have a minimum clearance of fifteen and one-half feet. Concrete has been used in the construction of all locks, culverts, spillways, and other controlling works along the Canal.

The lock gates and valves are operated by electricity, and all boats must be



Delta Dam, Delta, N. Y.

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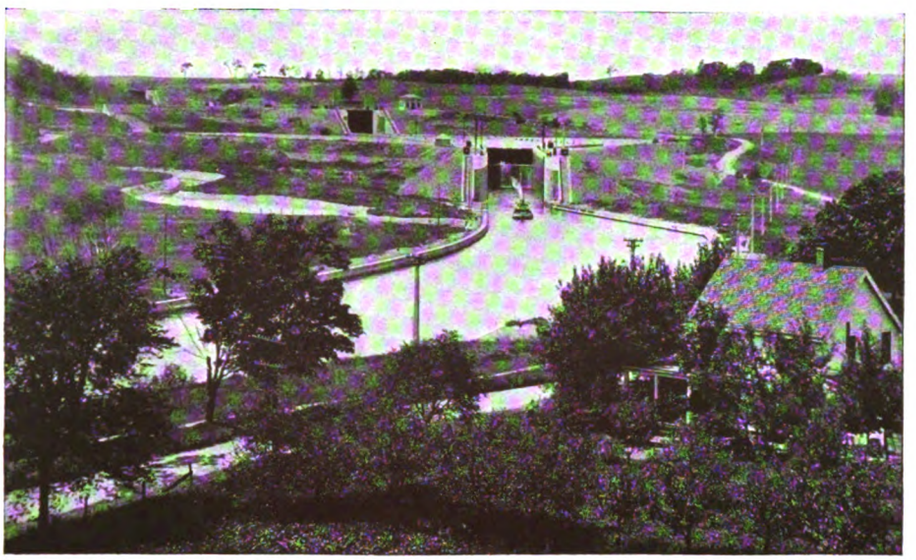
mechanically propelled, as no towpath has been provided.

Terminals with adequate facilities for wharfage, storage, and conveyors for handling cargoes will be located in New York, Albany, Troy, Utica, Syracuse, Oswego, Rochester, Buffalo, Lockport, Schenectady, Whitehall, Plattsburg, and other points.

The Barge Canal system has been called the world's greatest engineering feat, not alone because of the many engineering problems encountered in its construction, but also on account of the many peculiar and original structures which are to be found in the various channels of the system.



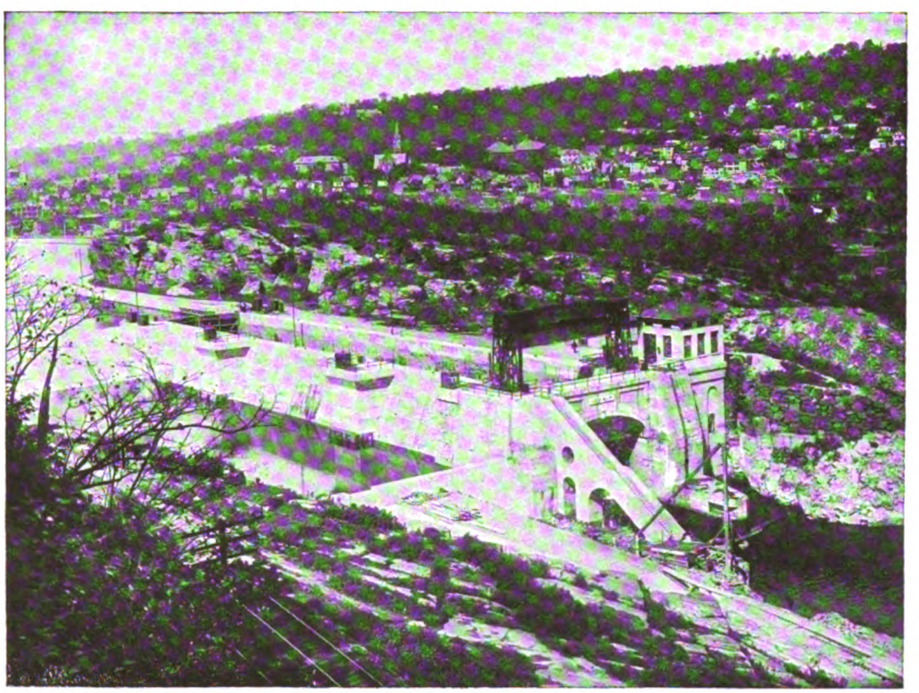
Three Locks in the Series at Waterford. The Total Lift Between the Hudson and Mohawk Rivers Is 169 Feet, and Is Accomplished by the Use of Five Locks

Foremost are the locks, of which there are fifty-seven on the waterways. These are all modern in every respect, constructed of concrete and operated by electricity. Each structure has a length of 328 feet and a usable length of 310 feet, with a width of 45 feet.

The heavy steel lock gates are operated by electricity, and also the valves which let in the water, and the exact position of the valves is shown during the process of opening and closing, by a clever system of electric light signals.

Some of these locks are the finest in the world, the five at Waterford having the distinction of being the greatest series of high lift in existence. The total lift of this series is 169 feet—or just one foot less than the combined lift of all the Panama Canal locks. The upper gates of each structure weigh 80,000 pounds, and the lower ones 207,000 pounds. The walls and floor contain 30,000 cubic yards of concrete. The walls are 54.5 feet high and 28 feet wide at the base. Two culverts, each 7 by 9 feet, run through these walls and are connected with sixteen ports, each 3 feet in diameter, through which the water pours into the lock chamber, the flow being controlled by the use of valves. This description is applicable to almost every lock in the canals, although some differ a trifle in height and size of culverts.

Another notable lock is that at Oswego. This is a siphon lock, the largest structure utilizing this principle ever built, and the first to be constructed in this country. It has a lift of 25 feet. The flow of water in this lock is started in the siphons by means of tanks, one being located on each wall near the upper gates and communicating with the upper levels by means of pipes, while both siphons are shut off from all other means of communication. The operation is performed by first filling the tank with water and closing the intake valve; then opening the outlet valve. The result is a body of water suspended by its own weight, but tending to escape to the lower pool, thus producing the necessary vacuum, and the water begins flowing over the crest in the neck of the siphon as soon as the air valve is opened, and air is admitted to the vacuum. The entire operation consumes less than five minutes.



Locks at Little Falls, N. Y.

The lock at Little Falls has a lift of 40 feet, 6 inches, and at the time of its construction was the highest single lift lock in the world. It is considerably higher than any on the Panama Canal.

There are many other notable locks and a number of massive dams, one of which is at Delta. This is a massive structure of concrete, five miles north of Rome. It spans the Mohawk River, the waters being impounded in a natural basin, where the village of Delta once stood. The dam at this point is 1,100 feet in length, and has a maximum height of 100 feet above the natural surface of the ground. The building of this dam created an artificial lake, which has an area at crest level of four and a half square miles, with a maximum depth of 70 feet, and an average of 23 feet. The total capacity is 2,750,000,000 cubic feet of water, and this supply is drained from a watershed of 137 square miles.

Capstans operated by a twenty horse power motor are also located at each end of every lock, which provide a means of

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Comparison of Locks at Lockport; Showing (Right) Old Erie, and (Left) New Barge Canal Locks

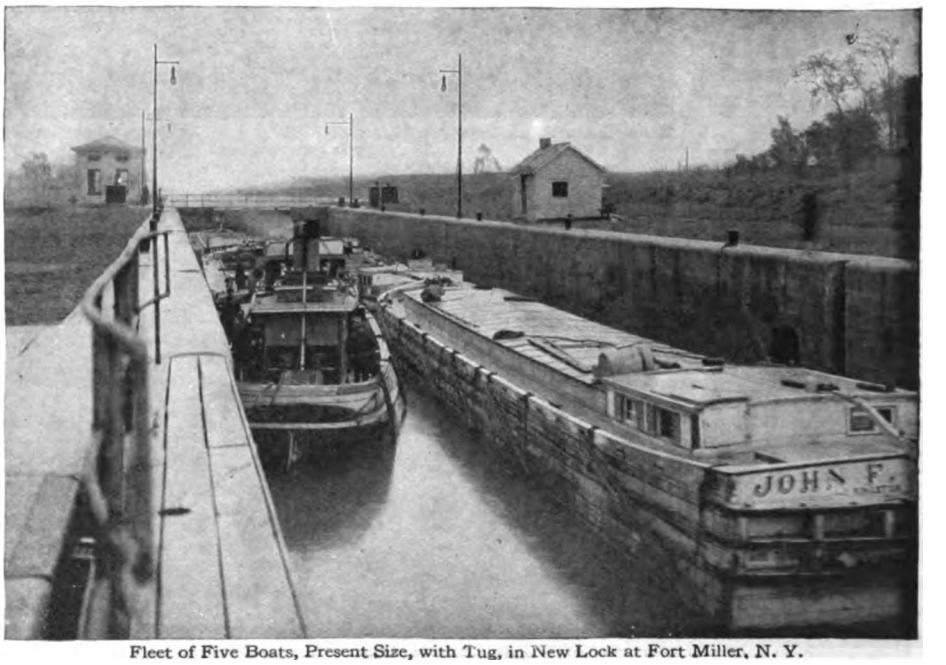
When it is considered that the construction work on the Canal was strung over a distance of 440 miles, the immense importance of the telephone in procuring supplies, securing labor, and maintaining the necessary coöperation between field forces and headquarters, is at once apparent. The supervising engineers who were on the field wherever the work was going on had this ready means of conferring with the State engineer and his assistants at Albany, whenever technical difficulties arose. Thus in a variety of ways did the telephone help to build the enormous waterway which in its turn will build up the commerce and industry, and with it the telephone demands, of the State and of the country.

We sleep, but the loom of life never stops and the pattern which was weaving when the sun went down is weaving when it comes up to-morrow.—*Beecher.*

controlling the movement of barges along the approach walls, and also tow them into and out of the chamber.

Eight movable dams located at Scotia, Rotterdam, Cranesville, Amsterdam, Tribes Hill, Yosts, Canajoharie, and Fort Plain, controlling the water flow of the Mohawk River are connected by Bell Telephone service. This has enabled the employees to communicate with each other in times of flood and thus advise as to regulating and taking care of the surplus water. The same advantages are also obtained by the employees at the Delta and Hinckley Dams.

BELL Telephone service has been indispensable throughout the construction period, and now that all but 7 per cent. of the Canal is completed it is found that the telephone is used as much as when the work was going on. Through regular exchange service the movement of boats is facilitated and the necessary supervision secured.



Fleet of Five Boats, Present Size, with Tug, in New Lock at Fort Miller, N. Y.

Intelligent Handling of Complaints

IF somebody would invent a divining-rod which would locate the dissatisfied or the disgruntled customer, so that his complaint might be heard, the pulling power of advertising would be increased. The customer who kicks may be turned into an asset, but the man who swallows his dissatisfaction and goes away without a word may prove a lasting liability. His grievance may be just or unjust; no matter. From that day forth he is an active or a passive disbeliever in the advertised claims of the concern which offended him. He represents a little center of infection in the body of the concern's good will. Perhaps his grievance is so slight that half a dozen words of explanation would serve to change his opinion entirely, but before those words can be spoken the man must be located. Unless he is persuaded to speak out, he may influence dozens of other people to his way of thinking.

One of the large hotel advertisers recently received a page torn from a weekly publication, with the following brief comment written across the face of his ad: "Mighty fine talk—if you lived up to it." The writer was at that time stopping at another hotel in a distant section of the country, and it took several letters from headquarters to locate him and get him to agree to "talk things over." Finally the facts came out. More than two years before he had received extremely discourteous treatment, and had resolved never to patronize the hotel again. He was an extensive traveler, and had a list of some two hundred houses at which he regularly stopped. For two years and more he had been warning his friends and chance acquaintances to stay away from the hotel which had offended him. Thanks, however, to intelligent handling of his rather peevish and belated comment, his opinion has been entirely reversed, and the hotel has a place on his "preferred list."

The hotel man is convinced that the smoking out of that one complaint was worth more than the entire cost of the advertisement; and so it was. But the main point lies in the fact that the complaint was properly looked into instead of being filed incontinently in the waste-basket. Sarcastic or ill-tempered comment from a dissatisfied customer is a vast deal better than no comment at all, and the only danger is in yielding to the impulse to ignore it or to pay it back in kind.—*Printers' Ink.*

The Penalty of Being Obliging

"What a nuisance the telephone is at times?"

"Yes, but it isn't half the nuisance it used to be."

"What do you mean?"

"I can remember the time, when telephones weren't so common, I used to have to spend most of my evenings carrying unimportant messages to the neighbors.—*Detroit Free Press.*

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The TREND of REGULATION

By R. V. Marye, General Attorney

Carrier May Extend Credit

THE Supreme Court of Colorado on June 5, 1916, in the case of Atchison, Topeka & Santa Fé Railroad Company against Bowman, held that a contract whereby the railroad engaged with a concert company to transport certain musicians from different points and allowed payments for transportation to be made in weekly installments did not constitute discrimination such as the law forbids. The Court said that credit is permissible when it is a business necessity or a matter of great and evident convenience; that the common law right to give credit is unquestioned and that statutes should not be so interpreted as to abrogate that right and deprive a carrier of compensation for services rendered in good faith unless such interpretation is clearly necessary.

Gas Company Cannot Be Compelled to Supply Gas Through the Equipment of Another Corporation

THE Court of Chancery of New Jersey on July 22, 1916, granted an injunction restraining the Mayor and Common Council of the City of Newark and others from removing the lamps of the Public Service Gas Company from the city's posts and substituting therefor the lamps of the Public Lighting Service Corporation. It appeared that the contract between the Public Service Gas Company and the City for municipal lighting had expired on March 1, 1916, and that the City had thereupon advertised for proposals for street lighting in two forms, the first asking for the supplying, maintenance, lighting, and extinguishing of gas lamps, and the second for the supply of gas to such lamps. The Public Service Gas Company sent the City a proposal for the maintenance of 2,000 or more street gas lamps, including necessary fixtures and the supply of gas therefor, and offered this service upon its standard rates filed with the Board of Public Utility Commissioners. This proposal not being in accordance with the advertised specifications was not considered by the City authorities as a formal bid and they awarded a contract to the Public Lighting Service Corporation, which agreed to supply and maintain for a period of three years certain standard burners on the City's lamp posts and to light and extinguish the lamps. The Gas Company was directed by the City to remove its equipment from the lamp posts so that that of the Lighting Corporation could be installed in its place, and later the last named corporation removed over fifty of the Gas Company's lamps and substituted its own lamps therefor, whereupon the Gas Company maintaining that it could not be compelled to furnish gas to lamps other than its own unless the City installed meters to measure the gas, applied for an injunction preventing interference with the remainder of its lamps.

The Court held that while a gas company which enjoys a franchise to lay and maintain mains in the city streets is under a duty to furnish gas to the citizens and the city, nevertheless the city cannot compel it to furnish gas for lamps supplied, lighted, and extinguished by a foreign lighting corporation and to depend upon and accept said foreign company's records of the gas consumed as the basis for compensation, or else, if such records are not satisfactory to it, to install meters or employ inspectors at its own expense to check up or measure the quantity of gas consumed, since the Gas Company is not obliged to go to the extra expense of meters or inspectors unless compensated therefor.

Rates Fixed by Municipal Ordinance Not Binding on the Commission

ON July 1, 1916, the Supreme Court of Nebraska, in the case of Marquis against Polk County Telephone Company, dismissed the appeal of plaintiff from an order of the Nebraska State Railway Commission authorizing defendant company to increase its rates for telephone service in the City of Stromburg. It appeared that the franchise ordinance under which defendant was operating in said City fixed the maximum rates to be charged by it for telephone service. The Court held that despite the terms of said ordinance the State Railway Commission had power to regulate the rates to be charged, since a municipal corporation unless expressly authorized and empowered by the Legislature has no power by contract to deprive the State of the right to regulate the rates of a public service corporation.

Telephone Company May Restrict Use of Telephone

THE Supreme Court of Utah, on July 25, 1916, in the case of Johnson against Mountain States Telephone & Telegraph Company, held that a rule of defendant company to the effect that its telephone instruments should be used only for the purpose of personal communications of the subscriber and his employees or immediate household on business of the subscriber, was reasonable and that the telephone company was justified in removing plaintiff's telephone for violation of said rule.

Contracts Fixing Rates May Be Terminated by Public Service Commission

THE Supreme Court of Washington, on July 29, 1916, in a suit by the Raymond Lumber Company against the Raymond Light & Power Company and another, in which the Public Service Commission of Washington intervened, held that where a town waterworks, a private corporation, for the purpose of inducing a sawmill to locate in a town, contracted with the sawmill company to furnish water at a certain rate, the Public Service Commission, upon complaint of the municipality of discriminatory rates, and upon a finding that the rates charged the sawmill were discriminatory, could thereafter order the water company to terminate the contract with the sawmill and to charge it for water at the water company's published tariff rate. The Court states that contracts valid when made are subject to change by the exercise of the police power, and that the clause of the Federal Constitution which provides that no law shall be passed which impairs the obligation of a contract, is not applicable to legislation within the scope of said police power, said power being a reserve power and not a delegated power.

Free Service to Municipality Illegal

THE Wisconsin Railroad Commission, in passing upon the complaint of Kaufman against the Hillsboro Light & Power Company, in which complainants alleged that said company's rates were inequitable, held, among other things, that the continuance of free service to

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the village hall and the fire department stations of Hillsboro was improper and must be discontinued.

A Utility Cannot Discriminate Except as Between Those Whom It Must Serve

DOUGHTER & SON complained to the Public Service Commission of Pennsylvania that the Philadelphia & Reading Railway Company and the Pennsylvania Railroad Company were compelling them to pay 55 cents to 58 cents a ton for transporting stone from Conshohocken to Philadelphia, while their competitors at Avondale, Pa., on the line of the Baltimore & Ohio Railroad Company, were only charged 42 cents per ton by said company for practically the same haul.

The Commission on September 21, 1916, dismissed the complaint, holding that a carrier cannot discriminate within the meaning of the statute except as between those whom it is lawfully required to serve and that, therefore, defendants were not guilty of discrimination merely because they did not afford complainants as favorable rates as other carriers afforded different shippers, even though the products were carried to a common market under substantially similar circumstances and conditions.

Federal Court May Restrain Confiscatory Rates Fixed by State

JOHN K. LANDON, receiver of the Kansas Natural Gas Company, sought an injunction in the United States District Court of Kansas, restraining the Public Utilities Commission of Kansas and others from enforcing certain rates for natural gas which he alleged to be confiscatory.

It appeared that the Kansas Natural Gas Company operated in three States, and that the plaintiff had been appointed receiver of its property in one of said States by the State court and in the other two States by a national court, and had been directed by the latter court to operate the business of the corporation in the three States as a unit under the direction of the State court until further orders of the national court. The District Court held, among other things, that it had jurisdiction on the petition of said receiver to prevent the Public Utilities Commissions of the States from destroying or irreparably injuring the business or property of the receiver and the utility by making or enforcing unreasonably low or confiscatory rates in said States. The Court held further, that the rates in question were confiscatory and unconstitutional, since the Commission in fixing them had failed to take into consideration the diminishing supply of natural gas and the consequent constantly increasing price, as well as the necessity for the utility to extend its pipes into new fields and the probably short life of the utility, due to the same facts. Moreover, the Court held that, taking into account the nature of its business, said utility was entitled to earn 8 per cent. on its capital instead of 6 per cent., which was the basis of the rates fixed by the Commission.

The Court also held that natural gas procured by a company in one State and piped into and sold in another is an article of interstate commerce, and does not lose that character because it is mixed in the pipes with a small quantity of gas procured in the State in which it is sold; that, therefore, the enforcement by the State in which sales are made of any law or regulation which substantially burdens the business or renders it impossible to conduct it at a fair profit, is an undue interference with interstate commerce in violation of the commerce clause of the Federal Constitution.

Commission May Alter Rates Previously Established Under Its Authority

THE Supreme Court of Georgia on August 18, 1916, in the case of Union Dry Goods Company against Georgia Public Service Corporation, affirmed the judgment of the lower court which denied plaintiff's application for an injunction restraining the putting into effect of rates higher than those fixed in plaintiff's contract with defendant.

It appeared that the rates fixed by said contract were the rates fixed by the rules of the Railroad Commission at the time of the execution of the contract, and that about nineteen months later said commission had adopted certain orders fixing rates higher than those specified in said contract. The Supreme Court held that it must be presumed that the rates prescribed by the Railroad Commission more than a year after the execution of the contract in question were reasonable, and that evidence that at the time the contract was made the parties acted in good faith and that the contract was made at the solicitation of the defendant, which was also making similar contracts with other customers in the City at rates lower than those fixed in plaintiff's contract, was not sufficient to overcome said presumption.

Public Utilities May Agree as to Division of Territory

THE Public Service Commission of Washington, in the case of Davall and others against the Pacific Telephone and Telegraph Company, on July 25, 1916, held, among other things, that an agreement between defendant company and the Farmers' Mutual Telephone Company, whereby said Companies, which had theretofore been competitors, agreed to divide the territory involved, and that each should confine its operations to certain parts thereof in order that competition and duplication might be eliminated, made for the highest efficiency and the greatest economy in telephonic communication and was beneficial to the patrons of both companies; that, therefore, the Pacific Company was justified in refusing to install telephones in the residences of complainants which were situated in the territory which had by said agreement been assigned to the Farmers' Mutual Telephone Company.

Obsolete Rates Discriminatory

THE Public Service Commission of Washington on August 5, 1916, in a proceeding to establish the value of the property of the Pacific Telephone and Telegraph Company for rate-making purposes, held, among other things, that certain obsolete rates which were being charged by said company as the result of contract relations not running concurrently with the rate schedules filed were unduly discriminatory and in violation of the statute and should be eliminated.

Discount for Prompt Payment Is Lawful

THE Public Service Commission of Missouri, in the case of John Anderson and others against Clinton County Telephone Company held, on July 10, 1916, that it is well settled law that a telephone company may allow a discount for prompt payment on its charges for service; that the losses sustained by the company because of nonpayment by certain subscribers, the delay in payment by solvent subscribers and the cost of collections fully justified defendant's proposed increase of 15 cents per month in its rates for service and its allowance of a discount of 15 cents if payment for service is made on or before the fifteenth of the month in which service is given.

"Central, Keep My Store for Me"

A PERPLEXED subscriber at Naples, N. Y., called the operator and queried in a strong foreign accent and bewildered tone:

"Central, I don't like to bother you, but someone just called me and ordered a pumpkin. Do you know who it was?"

The voice had not been recognized and the bewildered grocer was at a loss to know to whom he should deliver the order.

Service First

When Jack Frost nips the finger-tips
And high winds waft us along,
On a pole at dawn of the early morn
When everything goes dead wrong.
Our Lineman!

JOHN CLARKE,
Real Estate Dept., N. J. Division.

The inner side of every cloud
Is bright and shining,
I therefore turn my clouds about,
And always wear them inside out,
To show the lining.

Selected.

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Emergency
Telephone Calls

WHEN SUMMONING HELP by telephone in cases of *fire, lawlessness,* or *accident,* give your call to the operator in such a way that the nature of the emergency will be clearly understood.

Say to the operator, for example:

"I want to report a fire."
"I want a policeman."
"I want an ambulance."

If you are compelled to leave the telephone before the called telephone is answered, tell the operator where help is required.

In other words, give your call to the operator in such a way that she will be able to appreciate the urgency of your message and so make every effort to render aid.

NEW YORK TELEPHONE CO.

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